ASSESSMENT OF NEEDS AND INTERESTS CONCERNING THE EMPLOYEE WELLNESS PROGRAM AT THE PONCA CITY CONOCO REFINERY

By

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CHAPTER I

INTRODUCTION

Estimates from epidemiologic studies suggest that up to half of major illness and premature deaths in the United States are related to health habits and lifestyle factors over which individuals have some control. A basic assumption is that real gains can be made in employee health promotion and wellness by modifying lifestyle factors (Bertera, 1990A).

Health promotion is defined as the science and art of helping people change their lifestyle to move toward a state of optimal health (Erfurt, 1990). Health promotion and wellness are often used interchangeably. Lifestyle change can be facilitated through a combination of efforts to enhance awareness, change behavior and create environments that support good health practices.

The work site is an excellent place for a health promotion program for the following reasons: employees spend one third of their waking hours at work, reduction of time and travel barriers to employee's participation, sustained interventions are feasible, cohesiveness of the work group for peer support and peer pressure, existence of well-established communication channels and the fact that

employees constitute a captive audience (Pencak, 1991). Therefore, healthy lifestyle changes can occur at the worksite which will improve health care costs and productivity.

Workplace wellness or health promotion programs vary in actual content. Most programs, however, include at least one of the following four forms of intervention. First, there are educational strategies such as health fairs and lectures that provide information on diet, health care, and lifestyle among others. Second, there are evaluation screening programs that attempt to identify past, current and potential health problems. Third, there are prescription programs by which the employee is instructed on an individual level how to correct a current health problem or prevent a potential one. Fourth, there are behavior change support services, such as exercise equipment and aerobics classes, that provide some of the conditions for effecting lifestyle change (Girdano, 1986).

The success of many workplace wellness programs is constrained by low participation rates. Participation includes both recruitment of employees to the wellness program and sustained membership. Furthermore, those who do enroll do not necessarily represent the employees who would benefit most from these programs (Kotarba & Bentley, 1988).

The blue collar or nonmanagerial community appears to be the group which participates less often in wellness activities. Therefore, it becomes imperative to target

nonmanagerial personnel for input in wellness program planning to enable them to make healthy lifestyle changes.

Purpose and Objectives

The purpose of this study was to determine the wellness needs and interests of the Coordination Management personnel at the Ponca City Conoco Refinery pertaining to wellness activities. Conoco is a subsidiary of DuPont and both companies share the name Health Horizons for their employee wellness programs. Conoco's Health Horizons would like to increase involvement of nonmanagerial employees by offering programs that target their needs and interests. Specific objectives include the following:

1) To assess areas of interest among the Coordination Management personnel at Conoco in regard to a wellness program.
2) To identify wellness goals, learning methods, sources of worksite communication and food intake, current participation rates, health activity time allotments and current health behavior of the employees.
3) To make recommendations for health promotion activities based upon their needs and interests.

Hypotheses

This study postulated the following hypotheses:

H01: There will be no significant association between

self concept goals and learning pattern.

H02: There will be no significant association between class frequency, time or length according to age or gender.

H03: There will be no significant association between class frequency, time or length according to learning pattern.

H04: There will be no significant association between interest in fitness facilities and the shift the employee works.

H05: There will be no significant association between specific disease related goals and current risk.

H06: There will be no significant association between specific exercise related goals and current aerobic exercise frequency.

H07: There will be no significant association between nutrition related goals and age or gender.

H08: There will be no significant association between nutrition related goals and current aerobic exercise frequency.

H09: There will be no significant association between family dynamics goals and age or gender.

H10: There will be no significant association between stress management goals and shift.

H11: There will be no significant association between class frequency, time or length according to the convenience of current fitness facility hours.

H12: There will be no significant association between current use of fitness facilities and shift.

H13: There will be no significant association between current use of facilities and age or gender.

Assumptions

The assumptions made regarding this study included:

1) There will be a reduction in health risk if nonmanagerial employees participate in Conoco's wellness program on a regular basis.
2) Coordination Management personnel will be willing to provide complete information regarding a wellness program.
3) The Coordination Management personnel will complete and return the questionnaire.

Definitions

This section refers to terms used frequently throughout Chapters I and II that need clarification.

Class Design: A term used to describe the format of a class in relation to frequency of meetings, length in minutes and weeks, and class attendance.

Coordination Management: A term used to encompass nonmanagerial employees at Conoco who have the designation of janitor, graphic artist, food service worker, electrician, groundskeeper, and secretary.

Health: "Physical and mental well-being; soundness;

freedom from defect, pain, or disease; normality of mental and physical functions" (Webster, 1984).

Health Promotion: The science and art of facilitating healthy lifestyle changes to prevent disease or disability and maintain health.

Learning Method: A term that defines the resources and activities which best enable a student to learn.

Lifestyle Factors: Health habits such as smoking that affect future health and can be modified or improved.

Nonmanagerial or Blue Collar Employees: Employees in an industrial company who do not manage the business and do not have a college degree higher than an associate's degree.

Wellness: The actualized potential in each person to function at peak levels of performance with a healthy body, alert mind and sound emotional health (Cook, 1981).

Workplace wellness and workplace health promotion: Refers to systematic efforts by employers to provide various kinds of preventive health care to employees (Kotarba & Bentley, 1988).

Thesis Format

Chapters I,II and III follow the format set forth in the Graduate College Style Manual. Chapter IV will be written in journal article style following the Guidelines for Authors, Journal of the American Dietetic Association (Appendix D). Chapter V will include a brief summary of the study, recommendations and implications.

CHAPTER II

REVIEW OF LITERATURE

A comprehensive literature search provided information in three basic areas. These areas included, the concept of wellness; the blue collar/nonmanagerial employee; emphasis of wellness programs; and new techniques in health promotion.

Concept of Wellness

The term wellness may be defined as the actualized potential in each person to function at peak levels of performance with a healthy body, alert mind and sound emotions (Cook, 1981). Cook also supports the concept that to stay well is less costly than to get well. He sees wellness as a long range, lifetime project, and as such, it must become an ingrained habit that is truly a way of life (1981).

The DuPont Company, of which Conoco is a subsidiary, determined from the 1981 company epidemiologic studies that their employees' major causes of death were heart disease and stroke, which accounted for about 55% of deaths in a typical year, followed by cancer with 24% and accidents with about 13%. They also examined reasons for disability

lasting eight days or longer among active DuPont employees and found the leading cause was cardiovascular diseases, followed by digestive system diseases then by muscle, joint and bone problems, and respiratory infections. Automobile accidents and malignant neoplasms were at the bottom of the list (Bertera, 1990A).

Cost of Poor Health

The costs of poor health are both direct and indirect. Direct costs are visible dollar outlays for such items as medical and hospital expense, sickness benefits and worker's compensation. Indirect costs are expenditures affecting productivity or effectiveness on the job, including absenteeism, limitation of performance, poor efficiency, and disruptive behavior (Girdano, 1986).

Proposed Benefits of Health Promotion

Employer sponsored wellness programs provide a humane benefit to the employee and save countless dollars in reduced insurance costs, decreased lost time, improved productivity, and other economic benefits. These programs involve a variety of activities and methods designed to promote positive health related lifestyle practices (Anderson & Anderson, 1991).

Corporations that provide health promotion programs for their employees have a number of financial and altruistic incentives, such as: reduced absenteeism, reduced turnover,

increased productivity, improved health awareness, reduced mortality and morbidity, increased job satisfaction, reduced health care costs, extended employee work years, and an overall improved quality of life (Anderson & Anderson, 1991).

The Blue Collar/Nonmanagerial Employee

Blue collar workers have often been defined as those on an hourly wage and white collar workers as those on a weekly contract of pay, but this definition is not explicit enough. Alexy (1990) classified hourly workers into three governmental divisions of occupations: semi-skilled manual, personal service and unskilled manual labor including electricians, pipefitters, truck drivers, and a number of unskilled manual positions such as janitorial. Blue collar workers may also be referred to as nonmanagerial employees.

In the blue collar population, the participation rate in wellness programs is only between 3% and 5%. Franklin International offered their white collar and blue collar workers the same wellness program and found a great disparity in participation rates between white (48%) and blue (3%) collar workers. In order to increase blue collar participation, an onsite fitness center with free weights was established, in-plant programs were offered at hours corresponding to different shifts, and visits by the fitness staff to the manufacturing plant were increased. Incentive programs based on attendance in exercise, nutrition, and

health education classes that were used for white collar workers, were revised for blue collar workers to address lost time from accidents. These alterations in the fitness/wellness programs for blue collar workers resulted in a participation increase from 3% to 15% while the white collar workers' participation rate remained similar (48% - 52%) (Gebhardt & Crump, 1990).

Perceived Barriers to Participation

Even though programs may be open to all employees, blue collar workers may not participate to the same extent as those with a higher socioeconomic status. Studies have found that blue collar workers are not as likely to participate in leisure or supervised exercise programs as white collar workers. Other studies have found that those with a higher socioeconomic status are more likely to demonstrate positive health promoting behaviors. These findings reveal a need to focus on health promotion behaviors of the blue collar worker and to design interventions to increase participation and retention. Behaviors such as smoking and drinking which increase an individual's health risks also need to be targeted since those seem to be more prevalent among blue collar workers than among professional and managerial workers (Alexy, 1990).

Alexy surveyed 71 blue collar Wellness Center participants and 81 blue collar nonparticipants. She

developed a 35-item questionnaire to assess perceived barriers to and benefits of health promotion, motivational factors, need for social support, and convenience factors relative to the use of the Wellness Center. Results indicated that the participants were younger, and perceived their health status to be good to excellent while nonparticipants were older and perceived their health to be fair to good (1990).

The two groups identified perceived barriers which were separated during the data analysis into two types: physical and psychological barriers. The physical barriers included such factors as working over time, shift work, having a second job, carpooling to work, long distances to commute to the plant, and responsibilities at home. Psychological barriers included perceptions of being too old or too out of shape to initiate a physical fitness program (Alexy, 1990).

Nonparticipants also stated that they lacked the energy necessary to carry out a program of regular exercise and would probably not be able to continue the programs offered at the Wellness Center. Many of the nonparticipants also thought that their normal work activities provided them with sufficient exercise so additional structured programs were unnecessary (Alexy, 1990).

Jobs with physical demands do not necessarily help the worker maintain the capabilities required to continually meet the demands of job tasks or reduce health risk factors. The physical aspects of many demanding jobs are periodic and

do not last for a time period adequate to maintain or increase the worker's level of fitness or cardiovascular health (Gebhardt & Crump, 1990).

Effects of Wellness Intervention

Bertera (1990B) evaluated the impact of a comprehensive workplace health promotion program on absences among full-time employees in a large, multi-location, diversified industrial company. The program consisted of trained site coordinators, an established Health Promotion Activity Committee, orientations and publicity, health risk appraisal, and a variety of self-directed and group education opportunities. Blue collar employees at intervention sites experienced a 14% decline in disability days over two years versus a 5.8% decline at control sites. Savings due to lower disability costs at intervention sites offset program costs in the first year, and provided a return of $2.05 for every dollar invested in the program by the end of the second year. These results suggest that comprehensive workplace health promotion programs can reduce disability days among blue collar employees and provide a good return on investment.

Emphasis of Wellness Programs

Health Promotion in the Workplace

Conrad (1987) reviewed the data on who comes to

worksite wellness programs and determined that there does seem to be some self-selection of participants in the programs. Overall, it appears that participants are likely to be nonsmokers, more concerned about their health though they perceive themselves to be in better health, and are more interested in physical activities, especially aerobic exercise, than nonparticipants. There is also some evidence that participants may actually be healthier than nonparticipants. This raises again the question of whether worksite wellness programs attract those persons known to be at high risk for health problems.

In workplace settings, positive health behaviors may be reinforced by formal policies that encourage a favorable climate such as a nonsmoking environment, supportive counseling, referral and follow-up during physical examinations, and by the actions and examples of co-workers, family members, union representatives, and supervisors. A second area where health promotion programs can make a difference is in cafeteria and vending machine food selections. Site health promotion committees review what is offered in vending machines and cafeterias and discuss options with food service managers, who are often receptive to changes that will increase traffic and demand. Healthy food choices can be marketed by labeling heart healthy, low-fat, low-sodium, and high-fiber choices introduced for those who wish to make dietary changes (Bertera, 1990A).

Health Education and Program Planning

Health education is defined as any combination of learning experiences designed to facilitate voluntary adaptations of behavior conducive to health. Organized activity is based on the desire to intervene in the process of development and change in such a way as to maintain positive health behavior or to interrupt a behavioral pattern that is linked to increased risk for illness, injury, disability, or death (Bertera, 1990A). Erfurt et al (1990) indicated that health education approaches which do not include outreach and follow-up do not appear to produce high levels of program participation.

Personal assessments or health risk appraisals/health hazard appraisals (HRAs/HHAs), are used frequently to assess and plan health education programs. HRAs/HHAs evaluate an individual's health related behaviors, health risks and family histories, and personal characteristics using mortality statistics and epidemiologic data. The main objective of this assessment technique is the relationship of lifestyle to the disease process (Anderson & Anderson, 1991).

When DuPont employees wishing to join the company wellness program receive their Health Risk Appraisal, they are encouraged to choose which risk factors they want to change first and are informed of health improvement activities available to make these changes. They are also offered advice on how to accomplish their goals through

group or individual activities, using self-help kits, books, and tapes. Classes lasting four to 10 weeks are usually offered during lunch periods or right after shifts for convenience. Group and self-help approaches are designed to assist employees in learning how to quit smoking, lose weight, control high blood pressure and cholesterol, manage stress, or begin a regular exercise program. Employees receive a bimonthly health and fitness magazine at their homes which helps keep the entire family informed about current recommendations in health and wellness (Bertera, 1990A).

Disease

Estimates from epidemiologic studies suggest that up to half of major illnesses and premature deaths in the United States are related to health habits and lifestyle factors over which individuals can have some control. A basic assumption is that real gains could be made in employee wellness by modifying lifestyle factors (Bertera, 1990A).

A DuPont company study examined the relationship between morbidity and five income levels. Employees in the lowest two quintiles of income had the highest morbidity rates. Disease risk categories included myocardial infarction, cerebrovascular disease, hypertension, obesity, diabetes, and cancer. This suggests that health promotion and wellness education needs to be targeted to address the needs of average employees if individuals in the highest

risk groups are to be reached (Bertera, 1990A).

Race and ethnicity are also associated with health status. Hispanics have high rates of non-insulin dependent diabetes mellitus, while blacks have high rates of hypertension. Alcoholism rates are higher in blacks and Hispanics than in caucasians. Blacks also tend to be less physically active than caucasians (Brill et al, 1991).

Physical Fitness

According to Conrad (1988), the major goals of worksite wellness programs are to promote employee health and reduce corporate health care costs. The program participants' goals, however, are more in terms of fitness than health. To the extent 'fitness' reduces risk and promotes health, wellness goals can be at least partially met.

Several major epidemiologic studies have found correlations between sedentary lifestyles and elevated risk of coronary heart disease. Physical activity is also positively associated with successful control of obesity, itself an independent risk factor for preventable disease and disability (Walsh & Egdahl, 1989).

Various studies have also been published maintaining that exercise programs on the job do improve fitness levels and may also reduce absenteeism and boost morale and company loyalty among participants. Worksite programs, however, often attract highly motivated employees who would likely exercise anyway. One published study demonstrated that

exercisers are high performers and inferred that having an active fitness program can help a company selectively attract and hold high-performance employees (Walsh & Egdahl, 1989).

Nutrition

The role of nutrition in promoting and maintaining good health necessitates the provision of a nutrition component in health promotion programs. The rapid growth of such programs has created many opportunities for registered dietitians to market nutrition services to corporate clientele. Corporate wellness programs that incorporate a nutrition component offer a range of activities including nutrition assessment, individual counseling, weight control and disease awareness programs (Hickerson & Gregoire, 1992).

The foods you choose to eat can have long-term effects on your health and impact your ability to enjoy life to its fullest. Diet plays a major role in promoting and maintaining good health, preventing some chronic diseases and treating others, and speeding recovery from injuries (Woteki & Thomas, 1992). Good nutrition habits combined with exercise is also thought to be the most effective strategy for weight control and maintenance.

Stress Management

Health and safety hazards within the work environment are a source of stress for blue collar workers. Over 12,000

workers are killed annually in shop, dock, mine, and warehouse accidents, and 100,000 more are permanently disabled. Over 14 million workers are thought to be exposed daily to chemicals and other work materials suspected of being injurious to human health. Considering these data, it is not surprising that stress is demonstrated by some workers (Alexy, 1990).

As computer technology replaces or eliminates workers, job security may be threatened. Employment options for the blue collar worker may be limited due to lack of training or education. These work-related factors and the little hassles from their personal lives, may explain the tendency of blue collar workers to demonstrate unhealthy behaviors in response to stress (Alexy, 1990).

New Techniques in Health Promotion

Davidson Louisiana, Inc., a building products distributor, conducts a unique employee fitness program in which the participants are rewarded with credit toward expense paid vacations around the world upon reaching their individual fitness goals. The program is introduced each year in January, allowing each person one month to get a physical examination which is paid for by the company. The physician recommends a resting pulse rate, blood pressure range and states any restrictions on that person's exercise program (Brown, 1986).

After the physical, a consultant then prepares a

program for each individual. The program mainly involves exercise and recreational sports to increase fitness. Stipulations about distances, times, and repetitions are made for each activity. Individuals must exercise at least three days a week and the days cannot be consecutive. Every five weeks, the participants report to their regional offices to measure body weight, blood pressure and other health goals. Points are awarded depending on how close the participants are to their goals. Seventy-five percent of the maximum points has to be scored to meet the company's standards and receive the trip (Brown, 1986).

A comprehensive program which incorporates giving refunds or insurance premium reductions for employees who make positive lifestyle changes which actually decrease their risk for chronic disease may be the wave of the future. Because of their monetary importance, incentive programs such as these often attract and maintain the interest of employees.

Summary

Research and literature on health behaviors and participation rates of blue collar workers in corporate wellness has increased since the 1980s. This is partly due to evaluation and feedback from corporate wellness programs which conduct epidemiologic studies and cost-benefit analysis to justify corporate investment in health promotion. As such data were collected, it is likely that

many companies recognized the lower participation rates of blue collar workers and their higher risk for chronic disease and lower productivity.

There are still very few solid recommendations about how to improve the participation and retention of blue collar employees in wellness programs. The basic recommendations have been onsite fitness facilities, convenient operation hours and location, incentive programs and offering self-help resources. Perhaps researchers should explore ease of program and class sign up, whether the fitness staff is intimidating, availability of exercise equipment, offering activities which the nonmanagerial employee enjoys and comfort of the dressing and locker room facilities.

This review makes it apparent that blue collar/nonmanagerial workers must be catered to as a group with special needs and interests. Programs that target their needs and interests will have a higher rate of participation and chance of positive outcomes.

Wellness programs, however, are a last attempt to increase productivity and lower health risks. Ultimately, the employee is responsible for his/her own health. A healthy lifestyle of diet and exercise needs to be the individual's priority whether employed or unemployed.

CHAPTER III

PROCEDURES

In this study, the Coordination Management personnel at the Ponca City Conoco Refinery were surveyed in the fall of 1992 to determine their needs and interests regarding wellness program planning. This chapter outlines the research design, sample population, data collection, and data analysis.

Research Design

The descriptive survey design was used in this investigation. Descriptive research describes the existing situation. It involves the description, recording, analysis, and interpretation of current conditions. It also involves some type of comparison or contrast and attempts to discover relationships between existing variables (Best & Kahn, 1986).

In this study, the dependent variables consisted of the responses in the form of specific wellness goals obtained from the Personal Interests portion of the questionnaire, as well as information from the Class Design portion. The independent variables include personal and demographic variables, aerobic exercise frequency, learning methods,

interest in and usage of the fitness facilities, health risk, shift and sources of worksite food intake and communication.

Sample Population

Employees at Conoco who were foodservice workers, electricians, janitors and other Coordination Management personnel during the fall of 1992 constituted the sample population. From this population, all employees who were willing to participate were included in the study.

Data Collection

Planning and Development

Planning and development of this study began in the fall of 1991 and was completed in the fall of 1992. The development of the procedures and the instrumentation for this study evolved from a former study conducted by Health Horizons at DuPont's May Plant in Camden, South Carolina on October 10, 1985. Conoco is a subsidiary of DuPont and both companies use the name Health Horizons for their wellness programs.

The survey instrument was adapted from Health Horizon's 1985 study with changes suitable for the programs and facilities available at the Ponca City site. The questionnaire consisted of specific goals, class format, demographics, current participation, health risk, desired

activities, sources of food intake and communication channels.

The questionnaire was two pages in length, front and back, or five pages with the cover letter. A cover letter from the researcher and the Health Horizons office accompanied the questionnaire to explain the study and encourage participation (Appendix C). The completed questionnaire was approved by the Oklahoma State University Institutional Review Board (Appendix H).

Survey Procedures

The questionnaires and cover letters were mailed to the Coordination Management personnel via each group's supervisor. The survey packet included a cover letter explaining the purpose of the study, instructions, an envelope addressed to Health Horizons for returning the survey, and the actual survey. Health Horizons provided survey copies, computer usage, and envelopes with address labels as financial support. Participants were asked to return the survey to their immediate supervisor within one week. The supervisors reiterated that the employees' names would not appear on the survey or be used in the results. The supervisors were responsible for returning their employees' surveys, which were sealed in individual envelopes, through interoffice mailing to Health Horizons. Within a week from the mailing date, the Health Horizons coordinator called each of the supervisors to make sure they

received enough surveys and to see if all who chose to participate had completed and returned the surveys.

Data Analysis

The researcher coded the responses from the questionnaires and entered the data directly into the P.C. File program. The Statistical Analysis System (SAS) (SAS Institute Inc., 1985) was used to perform the necessary statistical procedures including frequency distributions, t-tests, Analyses of Variance, and Chi-Square analyses (Huck, Cormier, and Bounds, 1974). More specifically, question 1 (Personal Wellness Goals) had six subdivisions. Each subdivision had multiple statements and a corresponding three point rating system (Appendix B). This allowed the respondents to note whether they were interested in a particular goal and whether that goal was one of the three most important ones to them.

The goal subdivisions were:

- disease related
- exercise
- family dynamics
- nutrition
- self concept
- stress management.

There were 46 goals in all and each subdivision had goals ranged from four to 12 depending upon the subject matter of the goal statement. The wellness goal statements were classified into the subdivisions listed above according to their content and approved by the research committee

(Appendix G). The researcher analyzed the data in question 1 using frequency distributions, t-tests, Analyses of Variance and Chi-Square analyses. Statistics with significant associations ($p \leq .05$) may be found in Appendix E.

The information in questions 2 through 6 consisted of class participation, learning variables and demographics which the researcher analyzed using frequency distributions, Analyses of Variance and Chi-Square analyses. Such analyses allowed the researcher to identify any significant associations ($p \leq .05$) between the class participation variables as well as use of facilities and work hours.

The respondents' interest and participation in the current wellness program was found in questions 7 through 9 of the survey instrument. Chi-Square analyses was used to analyze this information.

Questions 10 and 11 were open to comments about convenient times to participate and activities of interest to the participant. The researcher compiled all the comments into a summary.

Question 12 established health risk by asking for health problems found in the participants' immediate family which was analyzed using frequency distributions and Chi-Square analyses. Such analyses allowed the researcher to identify any significant associations between the disease risk and specific wellness goals.

Question 13 and 14 dealt with sources of food intake and in-house communication during working hours. The

researcher used frequency distributions to analyze this information.

The last question consisted of work hours or shifts and occupations. There were 5 shifts and 20 occupations. The shifts were analyzed by Chi-Square analyses to find significant associations with other variables.

CHAPTER IV

NEEDS AND INTERESTS OF NONMANAGERIAL WORKERS IN A CORPORATE WELLNESS PROGRAM

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ABSTRACT

This study determined the needs and interests among nonmanagerial employees (N=229) at the Ponca City, Conoco Refinery, Ponca City, Oklahoma pertaining to wellness activities. There was an 87% (N=199) response rate for the questionnaires. Respondents were 54% male and 44% female, ranging in age from 18-65. Almost 60% were between the ages of 35-54. Job classification of respondents included graphic/printing (N=55), janitorial (N=47), clerical (N=32), service/mechanic (N=29), food service (N=21) and others. Wellness goals chosen by the Conoco workers were physical appearance/well being, weight control, healthier lifestyles and low cost nutritious meals. A predominant number of employees reported having a family history of high blood pressure. Respondents were interested in knowing how to interpret their blood pressure levels, prevent cancer and maintain good health. In addition, the majority 58.5%

(N=113) of employees did not have a regular exercise program and most 63% (N=123) never use the Conoco Fitness and Recreation facilities. In evaluating the facilities, 52% (N=83) felt that the hours were convenient, 72% (N=109) felt that the location was convenient, and 65% (N=102) said they were interested in the fitness facilities. Such data reflect an interest in the current wellness program however, program changes may be needed to bring about increased participation.

Introduction

Health or wellness promotion is defined as the science and art of helping people change their lifestyle to move toward a state of optimal health (1). Poor lifestyle habits initiated early in life may contribute to illness and/or premature death. Lifestyle change can be facilitated through a combination of efforts to enhance awareness, change behavior and create environments that support good health practices. A basic assumption is that real gains can be made in employee wellness by modifying lifestyle factors (2). Ultimately, the individual must choose to change current behaviors and to adopt a wellness lifestyle (3).

The worksite is an excellent place for a health promotion program for the following reasons: employees spend one third of their waking hours at work, reduction of time and travel barriers to employee's participation, sustained interventions are feasible, cohesiveness of the

work group for peer support and peer pressure, existence of well-established communication channels and the fact that employees constitute a captive audience (4). The success of many worksite wellness programs, however, is constrained by low participation rates. Participation includes both recruitment of employees to the wellness program and sustained membership. Furthermore, those who do enroll do not necessarily represent the employees who would benefit most from these programs (5). In the blue collar-/nonmanagerial population, the participation rate in wellness programs is 3%-5% (6). Even though programs may be open to all employees, nonmanagerial workers may not participate to the same extent as those with a higher socioeconomic status (7). Therefore, it becomes imperative to target nonmanagerial personnel for input in wellness program planning to enable them to make healthy lifestyle changes. For the purposes of this study, nonmanagerial employees are defined as employees in an industrial company who are not managers or do not have a college degree higher than an associate's degree. Blue collar workers may be referred to as nonmanagerial employees. The purpose of this study was to determine the needs and interests of nonmanagerial employees pertaining to wellness activities and to make recommendations for program planning in order to increase participation.

METHODS

Data Collection

The development of the instrument for this study evolved from a former study conducted by Health Horizons at DuPont's May Plant in Camden, South Carolina on October 10, 1985. Conoco is a subsidiary of DuPont and both companies use the name Health Horizons for their wellness programs. Revisions were made in question content which were appropriate for the programs and facilities available at the Ponca City site.

A self-administered questionnaire was mailed via interoffice mail to Coordination Management group supervisors who distributed the questionnaires to their employees. The survey packet included a cover letter explaining the purpose of the study, instructions, an envelope addressed to Health Horizons for returning the survey, and the actual survey.

The 25-item questionnaire required about 15 minutes to complete and included questions on personal wellness goals, class design, demographic variables, aerobic exercise frequency, learning methods, interest in and usage of the fitness facilities, health risk, shift and sources of worksite food intake and communication.

Participants were asked to return the survey to their immediate supervisor within one week. The supervisors reiterated that the employees' names would not appear on the

survey or be used in the results. The supervisors were responsible for returning their employees' surveys, which were sealed in individual envelopes, through interoffice mailing to Health Horizons.

Within a week from the mailing date, the Health Horizons coordinator called each of the supervisors to make sure they received enough surveys and to see if all who chose to participate had completed and returned the surveys. The data were collected during October and November 1992. All responses were anonymous. The completed questionnaire was approved by the Oklahoma State University Institutional Review Board. Health Horizons provided survey copies, computer usage, and envelopes with address labels as financial support.

Sample

A total of 229 questionnaires were mailed and employees completed and returned 87% (N=199) of the questionnaires. The sample consisted of 67 graphic and printing services, 55 janitorial, 35 service/mechanic, 33 clerical, 23 food services personnel, 9 electricians, and 7 groundskeepers. Of the 199 respondents, 55% (N=107) were male, while 45% (N=87) were female. The age group distributions were 3% (N=7) 18-24 years of age, 25% (N=49) 25-34 years of age, 30% (N=59) 35-44 years of age, 29% (N=56) 45-54 years of age, and 13% (N=25) 55 and older. Each personnel group returned at least 82% of their surveys. See Table 1 for

characteristics of respondents.

Statistical Analysis

Data were coded and the Statistical Analysis System (SAS) (8) used to determine significant relationships between variables. Analyses included frequency distributions, t-tests, Analyses of Variance, and Chi-Squares. In this study, the dependent variables consisted of the responses in the form of specific wellness goals obtained from the Personal Interests portion of the questionnaire, as well as information from the Class Design portion. The independent variables include personal and demographic variables, aerobic exercise frequency, learning methods, interest in and usage of the fitness facilities, health risk, shift and sources of worksite food intake and communication.

The researcher combined similar responses from a Likert scale for ease of interpretation. Questions that were open to comments were manually tabulated and summarized.

RESULTS

Nutrition and Sources of Food Intake

Most employees were interested in nutrition goals dealing with weight control, however, there were no significant variables associated between the nutrition goals and personal variables. The top five areas of interest are

listed in Table 2, along with the three most important nutrition goals chosen by individual participants.

Multiple answers were obtained from employees regarding sources of meals and snacks. Most meals were obtained from the cafeteria, snack bar, and vending machines and were consumed on the premises. Meals were also brought from home and only a small percentage of employees went out for meals. Snacks were also obtained at the work site or brought from home (Table 3).

Exercise

Analysis of Variance (ANOVA) showed that the means for age groups choosing exercise related goals were significantly ($p=.0021$) different from each other. The 25-34 age group had a significantly higher mean than the 35-44 and 18-24 age groups in their choice of exercise related goals. This may be due to the 18-24 age group being the smallest and the 35-44 the largest of the population while the 25-34 age group was average sized or it may indicate a greater propensity for 25-34 year olds toward exercise related goal setting. Gender was another demographic variable found to be significantly associated ($p=.0029$) with exercise goals. One probable reason is that women chose more exercise goals because they are more self-conscious about their physical appearance and more likely to join aerobic exercise classes than men.

According to t-tests, exercise goals were associated

(p=.0106) with learning from demonstrations . A postulated reason for this is that people learn exercise routines better from demonstration rather than from reading or other methods. It has been said that people remember 50% of what they see and hear. Exercise goals and learning from hands-on experience were also significantly associated (p=.006). One explanation for this learning method is that trying exercise steps on one's own makes learning to repeat the step easier because one can retain 90% of what he or she actually does and thinks.

Stress Management

Stress management goals were associated (p=.0159) with learning from demonstrations. One may postulate that people who chose stress management goals learn best by demonstration because they feel overloaded and can not clearly see a way out of their current situation. They might then look at what choices or decisions others are making in order to manage better.

The ANOVA procedure indicated a significant difference (p=.0390) in the means for those choosing stress related goals and learning best in a group, one-to-one with an instructor and on their own. The frequency distribution showed 44%, 30%, and 26% were respectively chosen for each learning method. A possible reason the mean for learning best one-to-one with an instructor was higher than the other two methods, when associated with choosing stress related

goals, is that individual tutoring or counseling is more personalized and specific problems or questions can be better addressed one-to-one than in a group setting or by self study. The absence of peers in a one-to-one situation, who might listen to questions one asks, also minimizes stress.

Disease

Those who chose family dynamics goals also had a family history of high blood pressure. There was a significant association (p=.0433) between these two variables. Frequency distributions also showed the majority 42% (N=80) of participants had a family history of high blood pressure. One may postulate that those who have conflict in their families have high blood pressure due to the psychological stress at home causing physiological changes in their bodies which in effect raise blood pressure. Frequency distributions indicated that the disease related goals of interest were generally preventive measures and dealt mostly with blood pressure, cancer, and general good health. The top five goals are listed in Table 4. Having high blood pressure was the number one family history risk, followed by cancer. The family histories of diabetes and heart attack were approximately the same.

Class Design and Learning Methods

A significant association (p=.0001) was found between

meeting times per week and class length in minutes (Table 5A). Thirty-nine percent (N=67) chose meeting once a week for 30 minutes. Very few participants wanted to meet more than twice a week and for 55 minutes. Frequency distributions indicated that an overwhelming majority - 74% (N=127) chose to meet once a week while 51% (N=86) wanted to meet for 30 minutes followed by 20% (N=34) desiring to meet for 45 minutes. This information will assist the coordinator in scheduling by knowing that the majority of participants want to meet once a week for 15 to 45 minutes.

Meeting times per week and length of classes in weeks were also significantly associated (p=.003) (Table 5B). Again, the majority chose to meet once a week and for 4-6 weeks. Frequency distributions tell us that the majority wanted to meet for 4 (22%, N=29), 6 (33%, N=43) and 8 (11%,N=14) weeks. Meeting times per week were also associated (p=.001) with learning from demonstrations. Thirty-eight percent (N=48) chose learning from demonstrations and meeting once a week, 12% (N=20) chose learning from demonstrations and meeting twice a week, 7% (N=12) chose learning from demonstrations and meeting three times a week. One may postulate that a higher percent chose learning from demonstrations and meeting once a week because they were only meeting for a limited time and they would retain more by seeing a demonstration than by other learning methods during that time period.

Length of class in weeks and age were significantly

associated (p=.001) (Table 6). This shows a trend toward the younger age groups desiring shorter class lengths and the older age groups wanting slightly longer classes which may suggest a greater commitment to learning on the part of the older population.

Significant associations (p=.029) were found between sex and learning from lectures. Forty-six percent of males (N=88) did not choose learning from lectures and 32% of females (N=60) did not choose learning from lectures. Frequency distributions also indicated this was one of the least chosen learning methods by all participants indicating either boredom or lack of interest in lecture situations. Frequency distributions show 74% (N=142) chose learning from hands-on experience, 42% (N=81) chose learning from demonstrations, 33.5% (N=64) chose learning from video or audio cassettes, and 31% (N=59) chose learning from trial and error. These results show there is a new trend toward learning from audio/visual and experimental methods. Table 7 provides a summary of the significant p-values found for class design and learning methods.

Fitness Facility Usefulness

Most, 63% (N=123) of participants said they never use the Conoco Fitness and Recreation facilities (i.e. swimming pool, gymnasium, and exercise room equipment) (Table 8). This low participation rate is consistent with the 3-5% average blue collar worker participation rate recorded by

Gebhardt and Crump (1990). But, 52% (N=83) felt that the hours were convenient, 72% (N=109) felt that the location is convenient, 74% (N=116) agreed that the fitness and recreation staff is helpful and friendly, 65% (N=102) were interested in these facilities, 46% (N=68) felt the exercise equipment is often available, and 44% (N=65) agreed that the lockers and dressing room meet their needs. Although this information is favorable, one should take into account that most of the participants never use these facilities and it is not known whether they ever have.

Significant associations (p=.014) existed between convenience of hours and gender. More males 21% (N=33) than females 14% (N=22) felt that the hours were not convenient. However, slightly more of both sexes agreed that the hours were convenient.

Convenience of hours and work shift were significantly associated (p=.0001). Almost twice as many of those in the evening and rotating shifts felt that the hours were inconvenient as those who did not, indicating a discrepancy in fitness facility operation hours offered for the convenience of those who work evening hours. When participants were asked to comment on what hours would be more convenient for them, six evening shift workers said after 1:30 a.m..

There was a significant association (p=.048) found between convenience of location and class length in weeks. These data indicate that the participants felt the location

was convenient as long as the classes ranged from 4 to 8 weeks in length (Figure 1).

Helpfulness and friendliness of the fitness and recreation staff was significantly associated (p=.042) with work shifts. The 7a.m.-6p.m. shift had 53.5% (N=84) in agreement that the staff was helpful and friendly while the 5 p.m.-1:30a.m. shift only had 9.5% (N=15) in agreement. Overall though, most shifts agreed that the staff was helpful and friendly.

Interest in facilities and work shifts were significantly associated (p=.048). Nearly twice as many (30% versus 16%) of the evening and rotating shift workers were not interested in the fitness facilities as the day shift workers. However, most shifts were interested in the fitness facilities. See Table 9 for a summary of significant p-values for fitness facility usefulness.

Sources of Communication

Frequency distributions indicate that the greatest source 89% (N=171) of communication and information at the Ponca City Conoco Refinery is the Advent, a type of classified advertisement open to all employees and put out by the Health Horizons staff. The second best source 85.5% (N=165) of communication is the Ponocoan, a company newsletter containing positive news about company events. The third best source 22% (N=42) of communication is computer E-Mail, this is open to any employee who has an

office computer - they can generate a computer message and send it to individual employees or departments. These resources may be useful in targeting the nonmanagerial population concerning future wellness activities and promotional events.

DISCUSSION

The information obtained from this study indicate the employees' current interest and need for a wellness program as well as current health behavior and class design. Conoco's parent company, DuPont, announced that during 1993 there would be a greater emphasis on disease prevention and wellness as part of their plan to reduce health care costs. Beginning this year, the company will become more aggressive and proactive in identifying employees' personal health risk factors and helping them reduce those risks. Health Horizons will be used to accomplish this (9). Based on the results of this research, several recommendations can be made. The Fitness and Recreation facilities need to offer hours either before or after their shifts to make it more convenient for them to exercise at the work site. An aggressive campaign needs to be made concerning the prevention and control of high blood pressure. Information on the effects and benefits of exercise should be disseminated to all employees. In addition, materials and programs should motivate and facilitate continued participation in regular exercise programs. Classes should

be designed according to the information gathered in this study using the learning methods chosen by participants. Efforts should be made to provide a wider variety of healthy food choices and consumer nutrition education in all sources of food intake from company cafeterias and snack bars to vending machines. Wellness staff can use key sources of communication for advertising and promoting their events and classes. Further, nutrition education is needed regarding weight loss and maintenance, living a healthier life without giving up everything one enjoys, shopping for low cost healthy food, and preparing low cost nutritious meals. One possible vehicle for such information would be offering short courses on these topics and providing demonstrations and hands-on experience in these courses.

Even though this study focused on a population from one petroleum refinery, the information generated may reflect both current interests and areas of need in other refinery settings and the same nonmanagerial population in general. Nationwide comparative studies could perhaps support or confirm these findings.

IMPLICATIONS

Wellness programs are a last attempt to increase productivity and lower health risks. Although the employee is ultimately responsible for his/her own health, employers seek wellness programs in order to reduce insurance costs, decrease lost time, improve productivity, and for other

economic benefits. This survey demonstrates that nonmanagerial employees generally have positive attitudes toward wellness programs but they feel they lack the time and motivation to participate in these programs. Differences in respondents' needs and interests indicate that wellness activities should be designed to meet the varied needs and interests of this group.

Responses to this survey suggest that wellness intervention by wellness staff is often limited to employees who are willing to participate, an approach that makes it difficult for all employees to achieve lifestyle changes. Providing programs at convenient times and locations should be a priority for program planners. This study makes it apparent that nonmanagerial workers must be catered to as a group with special needs and interests. Programs that target their needs will have a higher rate of participation and chance of positive outcomes.

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Table 1
Characteristics of respondents

Characteristic	Percentage	N
Gender		
Male	54%	107
Female	44%	87
Age Group		
18-24	3%	7
25-34	25%	49
35-44	30%	59
45-54	29%	56
55-65	13%	25
Job Classifications		
Graphic/printing	28%	55
Janitorial	24%	47
Clerical	16%	32
Service/mechanic	15%	29
Food services personnel	11%	21
Groundskeepers	4%	8
Electricians	3%	7
Shift		
7a.m.-6p.m.	62%	123
5p.m.-1:30a.m.	22%	44
Rotating shifts	11%	21
5:30a.m.-2:30p.m.	4.5%	9
5p.m.-6a.m.	0.5%	1

Table 2A
Top five nutrition related goals of interest to employees

Goals	Response rate*
●Keep weight off when I lose it	29% (N=57)
●Live a healthier life without giving up everything I enjoy	28% (N=55)
●Shop for low cost healthy food	25% (N=50)
●Lose weight	24% (N=47)
●Prepare low cost nutritious meals	24% (N=47)

Table 2B
Top three most important nutrition goals

Goals	Response rate*
●Lose weight	25% (N=50)
●Keep weight off when I lose it	15% (N=29)
●Live a healthier life without giving up everything I enjoy	6% (N=12)

* Note: Multiple answers were obtained from employees.

Table 3
Sources of meals and snacks

Meals	Response rate*
●Cafeteria/snack bar/vending	65% (N=125)
●Bring from home	57% (N=110)
●Go out for meals	15% (N=30)
Snacks	
●Cafeteria/snack bar/vending	86% (N=161)
●Bring from home	38% (N=72)

* Note: Multiple answers were obtained from employees.

Table 4
Top five disease related goals of interest to employees

Goal	Response rate*
●Know what different blood pressure levels mean	18% (N=35)
●Learn more about skin care for cancer prevention	17% (N=33)
●Know what my blood pressure is	17% (N=33)
●Check to see if I'm in good health	16% (N=32)
●Worry less about cancer	8% (N=16)

* Note: Multiple answers were obtained from employees.

Table 5A
Meeting times per week and class length in minutes

Weekly frequency	Class length	Response rate
Once a week	30 minutes	39% (N=67)
Once a week	15 minutes	15% (N=25)
Once a week	45 minutes	9% (N=16)
Twice a week	45 minutes	8% (N=14)
Twice a week	30 minutes	7% (N=12)

Table 5B
Meeting times per week and class length in weeks

Class frequency	Length in weeks	Response rate
Once a week	6 weeks	24% (N=32)
Once a week	4 weeks	20% (N=26)
Once a week	3 weeks	6% (N=8)
Once a week	8 weeks	6% (N=8)
Twice a week	6 weeks	6% (N=8)
Once a week	1 week	5% (N=7)

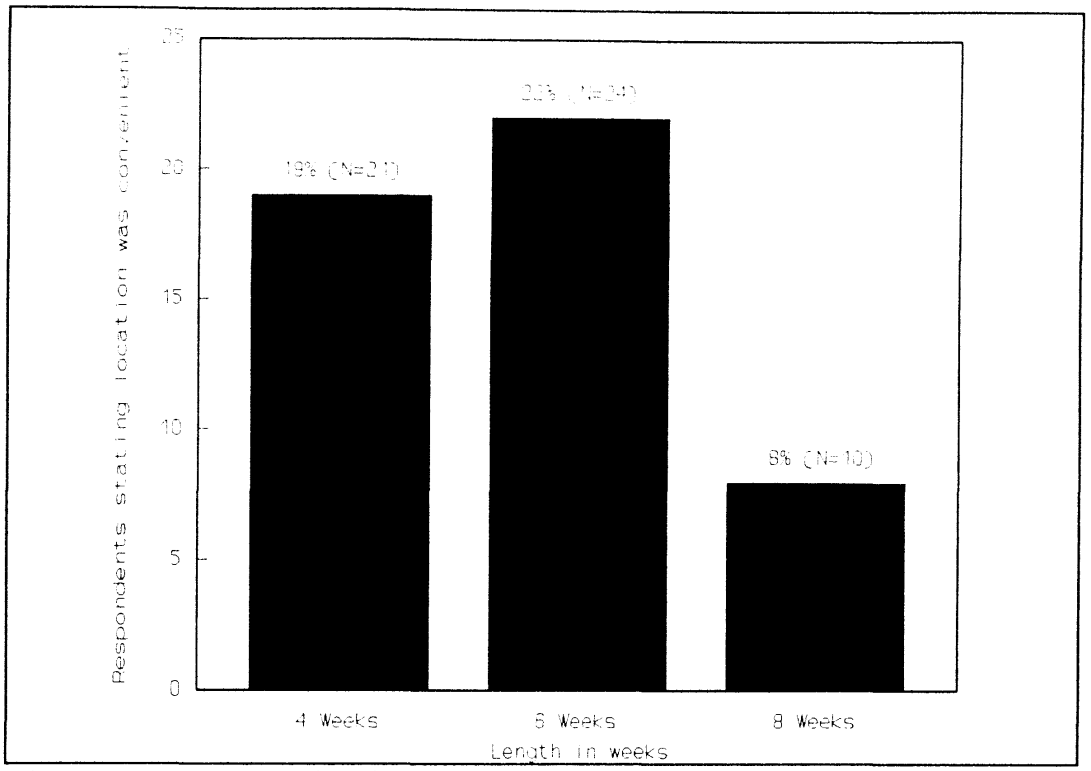

Figure 1 - Significant chi-square associations ($p \leq .05$) between convenience of location and class length in weeks.

Table 6
Length of class in weeks and age

Weeks	Age	Response rate
6 weeks	45-54	11% (N=14)
6 weeks	35-44	9% (N=12)
4 weeks	35-44	9% (N=12)
6 weeks	25-34	9% (N=12)
4 weeks	25-34	8% (N=11)

Table 7
Significant p-values for class design and learning methods

	Meeting length	Class length	Demonstrations	Lectures
Meeting freq. (weeks)	.0001	.003	.001	NS
Meeting length (min.)	---	.0001	.021	NS
Age	NS	.001	.009	NS
Gender	NS	NS	NS	.029

Note: Significance at $p<.05$.
NS = nonsignificant

Table 8
Fitness facility usage

Frequency	Response rate
Never	63% (N=123)
Seldom or once per week	26% (N=51)
2-3 times per week	8% (N=15)
4 or more times per week	3% (N=6)

Table 9
Significant p-values for fitness facility usefulness

	Meeting length (min.)	Class length (weeks)	Gender	Shift
Convenient hours	NS	NS	.014	.0001
Convenient location	NS	.048	NS	NS
Friendly staff	NS	NS	NS	.042
Interest in facilities	.003	NS	NS	.048
Equipment availability	NS	NS	NS	.027

Note: Significance for $p<.05$.
NS = nonsignificant

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the needs and interests of a segment of the nonmanagerial population at the Ponca City Conoco Refinery regarding an employee wellness program. The following objectives were established: to assess areas of interest among the nonmanagerial personnel at Conoco in regard to a wellness program; to identify specific wellness goals, sources of food intake and communication, current participation rates, health activity time allotments and current health behavior; to make recommendations for health promotion activities and for further studies based on findings from this study. As a result of these objectives, thirteen hypotheses were postulated.

Hypothesis one stated that there would not be any significant association between self concept goals and learning pattern. Significant associations were found in 1 of the 8 total analyses performed. The variable significantly associated with self concept goals was learning from demonstrations. As a result of this significant association, the researcher rejected H01.

Hypothesis two stated that there would be no significant associations between class frequency, time, length and age or gender. Significant associations were found in 3 of the 19 analyses performed. The variables significantly associated with class design were age and sex. As a result of these significant associations, the researcher rejected H02.

Hypothesis three stated that there would be no significant associations between class frequency, time, length and learning pattern. Significant associations were found in 2 of the 21 analyses performed. The variable significantly associated with class format was learning from demonstrations. As a result of these significant associations, the researcher rejected H03.

Hypothesis four stated that there would be no significant associations between interest in fitness facilities and shift. The variable significantly associated with interest in fitness facilities was shift. As a result of this significant association, the researcher rejected H04.

The null hypotheses 5 through 13 did not have statistical significance. The researcher failed to reject these hypotheses.

Other Results Not Included In Article

There was a significant association (p=.027) between availability of exercise equipment and work shifts. Thirty-

one percent (N=46) in shift #1 agreed that the exercise equipment is always available while 19% (N=28) disagreed, 9% (N=14) in shift #4 agreed that the exercise equipment is always available while 5% (N=7) disagreed. There were no significant differences in agreement between the other shifts. The disparity between shifts may be due to the larger size of shift #1 in comparison to the others.

Additionally, two late evening shift workers requested a night aerobics class be offered from 9-9:30 p.m. during their lunch break and six other individuals requested that the fitness facilities open at approximately 1:30 a.m. in the morning so they could go immediately after work. Other activities participants requested which are not currently offered by Conoco were racquetball, martial arts, tennis, roller skating, cycling club, dancing, and aerobics classes designed specifically and separately for the needs of men and women. One person wanted to know how to exercise safely with thrombophlebitis. Some requested family splash hours be offered year round and open swim be held before 5 p.m. Monday through Friday.

Self concept goals and learning from demonstrations were significantly (p=.0399) associated. This is likely due to the observation that people who have a poor self-concept or low self esteem, are usually followers rather than leaders so they learn best by watching what other people do.

Family dynamics goals and learning from lectures (p=.0223), trial and error (p=.0503), video or audio

cassettes (p=.0065), demonstrations (p=.0008), and from homework (p=.0139) were significantly associated. It is interesting to note that the only two learning methods that were not associated with family dynamics goals were reading pamphlets or handouts and hands-on experience. Possibly, these two methods just do not provide the heads of households with the type of information they need to function properly in a family environment. Therefore the learning methods that were significantly associated with family dynamics goals may provide useful information which enables these individuals to achieve such goals.

Recommendations

The following recommendations are based on this study's findings and, when instituted, would hopefully encourage employees to change existing behaviors towards healthier lifestyles. These recommendations are directed toward the administrators of the Ponca City Conoco Health Horizons Wellness Program.

1) Since many of those in the evening and rotating shifts felt that the fitness and recreation hours were inconvenient fitness facility operation hours need to be offered either before or after their shifts to make it more convenient for them to exercise at the work site.

2) Because several participants chose disease related goals addressing high blood pressure and the majority also had family histories of high blood pressure, an aggressive

campaign needs to be made concerning the prevention and control of high blood pressure. This may entail periodic screenings, incentive programs for those who lower their blood pressure, educational programs offered in the cafeteria during lunch, and changes in company menus to offer low sodium alternatives.

3) As a result of the low participation rates found in regular aerobic exercise and the great interest of this group in choosing exercise related goals, these individuals need to be targeted for exercise programs. Information on the effects and benefits of exercise should be disseminated to all employees. In addition, materials and programs should motivate and facilitate continued participation in regular exercise programs. Supervisors and co-workers who exercise or participate in nutrition classes should receive publicity to generate peer participation.

4) Classes should be designed according to the information gathered in this study using the learning methods chosen favorably by participants.

5) Because a large percentage of the employees eat meals and snacks from work site sources, efforts should be made to provide a wider variety of healthy food choices and consumer nutrition education in all sources of food intake from company cafeterias and snack bars to vending machines.

6) Because a considerable amount of employees also bring their meals from home, there is a need to offer short courses on brown bag lunch meal planning to encourage

nutritious meal consumption in this group. This could be conducted during the lunch hour and have everyone bring their best brown bag lunch.

7) To generate wellness program awareness, a Health Promotion Activity Committee should be established to decide on criteria for program design and evaluation as well as various aspects of program implementation. Orientations to the wellness program and facilities should be conducted so that barriers to participation can be eliminated. Wellness staff can use key sources of communication for advertising and promoting their programs, events and classes as well as for conveying wellness educational information.

8) Because interest was demonstrated in nutrition related goals, further nutrition education is needed regarding weight loss and maintenance, living a healthier life without giving up everything one enjoys, shopping for low cost healthy food, and preparing low cost nutritious meals. One possible vehicle for such information would be offering short courses on these topics and providing demonstrations and hands-on experience in these courses. Health Horizons could promote its free food diaries and nutritional analyses to generate awareness of nutrition.

9) Because the younger age groups were more likely to exercise regularly, classes should be offered targeting the older age groups and their specific exercise needs. This could be accomplished by offering more beginner classes, water exercises, and by hiring instructors in this age group

range to make the individual feel more comfortable with the instructor. It may also be beneficial to highlight fitness achievements made by individuals in this age group.

10) Women tend to join structured exercise classes more than men so a class could be designed specifically for men and be instructed by a male. Although a significant number of males participate in intramural sports such as basketball and volley ball, these sports are only offered seasonally - it might keep more men physically active if these sports were offered year round.

11) Evening workers should be encouraged to exercise a few hours before work with the facility hours extended at least three days a week or to use the video exercise tapes in Health Horizons' library and exercise in the fitness center during the evening. If there is really an interest in evening aerobics classes, someone from this shift may wish to become certified to teach aerobics and offer an evening class. Another option is for Health Horizons to measure the walking space inside the building so evening workers could safely walk inside and others could also utilize this indoor track during inclement weather.

12) Participants listed additional activities not offered by Conoco. Two of the activities, martial arts and racquetball are offered by the local YMCA so it is not necessary for Health Horizons to accommodate these since they already offer a discount on memberships to the YMCA. They could however, offer ballroom and country western dance

classes. A tennis club, cycling club, swimmer's club and golfing club could be started at Conoco and meet weekly for exercise and information exchange as well as competitions. Family oriented activities might include offering parking lot rollerskating, a health fair with competitions for family members, and extending family swim hours year round.

13) Though employee participation in the fitness facilities was low, 60% of the employees said they would participate in programs offered according to the three most important wellness goals they chose. This indicates a need to offer classes according to the specific goals participants rated highest in order to increase the participation rates of the blue collar employees. Self-help programs could also be promoted for those who don't want to get involved in onsite activities. Health Horizons could publish announcements about new additions to their self-help library and provide brief summaries of these books or audio/visual cassettes in the Advent or RECNEWS.

14) Further research is needed to determine what specific types of exercise this population enjoys most and what resources they use to obtain nutrition and exercise advice.

15) Nationwide comparative studies using similar population groups could perhaps determine whether the results of this study were specific to this locale or whether they are generally representative of blue collar-type employees.

At the time of this study it is important to note that Conoco was going through a major reorganization and just less than a week after this survey was sent out, some layoffs were announced. This population was not significantly affected by this announcement but future layoffs in janitorial and foodservice staff may be expected as there is talk of going contract in these areas. Many had anticipated the layoffs but the stress was mounting as the layoff announcements neared.

As general suggestions, timing is critical. Mailings should be made when the work environment is stable in order to increase the return rate. There were eight blank or scribbled on surveys returned by janitors who were upset with their boss and the possibility of losing their jobs. Lastly, a definition of wellness should accompany such a study as the term connotes different meanings to different individuals.

The employees exhibited areas of need and interest in exercise, stress management, and weight control, and these areas should be the focus for programming at Conoco's Ponca City Health Horizons Wellness Program. The need for educating employees and retraining lifestyle behaviors was evident. The choice, however, still lies with the individual. The responsibilities then, of health professionals, are to educate and motivate the employees, as they explore, and hopefully adopt, wellness lifestyles.

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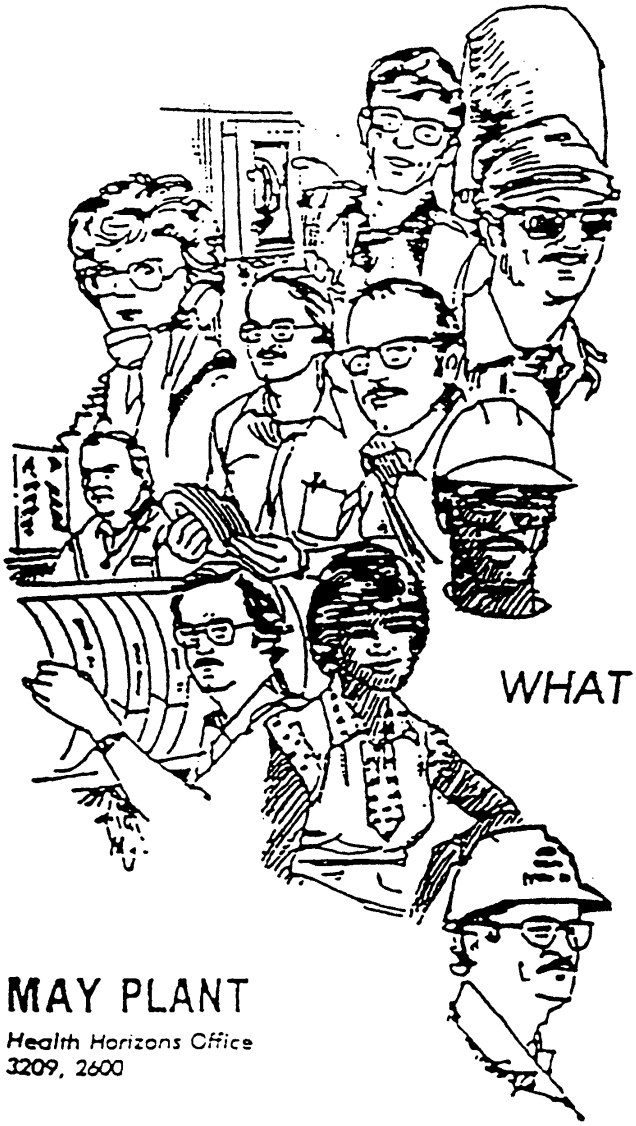
APPENDICES

APPENDIX A

PRELIMINARY RESEARCH INSTRUMENT

Return to Michelle Hazelwood



Health Horizons

Employee Health Improvement Program

WHAT ARE YOUR INTERESTS

MAY PLANT

Health Horizons Office
3209, 2600

DUPONT

CAMDEN, SOUTH CAROLINA

In order to provide programs of interest to you, Health Horizons needs your input. Therefore, all May Plant employees are receiving this questionnaire. Please complete it as soon as possible, and return it by circling Michelle Hazelwood on the front of the survey and putting it in the plant mail. Results of the survey will be posted on area bulletin boards by 10-31-85. All answers are confidential. Please do not sign your name.

1. Things You Are Interested In:

I want to:

[] look better in my clothes
[] feel happier about life
[] quit smoking
[] lose weight
[] know what my blood pressure is
[] have more energy left at the end of the work day
[] feel better about myself
[] have thinner thighs
[] get a clearer idea of what I want out of life
[] keep weight off when I lose it
[] know which diets are safe
[] cut down on the alcohol I drink
[] know the minimum of exercise I need to lose or maintain my weight
[] feel less depressed
[] be able to plan and prioritize my time
[] lower my blood pressure
[] find a partner to exercise with me
[] know the easiest way to quit smoking
[] feel less anxious about the future
[] be better at making decisions
[] learn more about skin care
[] know some menus for a healthy diet that will help me lose weight and yet eat the right foods
[] be more self-assertive, stand up for myself
[] know how to deal better with my aging parent(s)
[] have a flatter stomach
[] know ways to quit smoking that I can try on my own
[] be able to say 'no' to requests so I'm not overloaded
[] worry less about cancer
[] reduce the medication needed to keep may blood pressure at safe levels
[] know the best time of day to eat to lose weight
[] be more independent, do more things for myself
[] know the truth about preventing or treating hair loss
[] know how I can tell if a diet is really going to help me lose weight
[] feel more in control of my life
[] learn how to discipline my kids without feeling guilty

[] do without some of the pills I take
[] stay active but avoid injuries
[] keep my temper better
[] get along better with my family
[] stop worrying so much about money
[] take up a sport I used to play
[] get some relief from chronic, nagging pain
[] know what different blood pressure levels mean
[] find enough time to do everything that needs to be done
[] build up my will power
[] have some control over the demands on me at work
[] snap back as soon as possible after a recent injury or operation
[] not worry so much about things
[] help someone close to me lose weight and keep it off
[] stop being bored
[] sleep better at night
[] know what I can do to lower my blood pressure
[] get along better with people I work with
[] stop worrying about my health
[] check to see if I'm in good health
[] keep the spark in marriage
[] get back in shape after a recent lack of activity
[] not get out of breath so easily
[] stop a nervous habit
[] improve my love life
[] live a healthier life without giving up everything I enjoy
[] other:

_____

_____

2. Please go back and circle the 3 most important things that you checked on the list.

3. If I took part in a group, I would rather meet:
(choose one)
[] once a week [] twice a week [] three times a week
.....
(choose one)
[] for 15 minutes [] for 30 minutes
[] for 45 minutes [] for 55 minutes
.....
For how many weeks? _____ weeks

4. In general, I learn best: (choose one)
[] in a group [] one-to-one with an instructor
[] on my own

5. In general, I learn best: (choose one)
[] from lectures or demonstrations [] from reading
[] "trial and error"

Background Information: In order to better plan programs, it is helpful to see trends in interests by various groups. Please help by supplying the following information:

Sex: [] Male [] Female

Age Group: [] 18-24 [] 25-34 [] 35-44 [] 45-54
[] 55-64

APPENDIX B

RESEARCH INSTRUMENT

OSU

Oklahoma State University

DEPARTMENT OF NUTRITIONAL SCIENCES
COLLEGE OF HOME ECONOMICS

STILLWATER, OKLAHOMA 74078-0337
HOME ECONOMICS 425
405-744-5040

November 2, 1992

PLEASE RETURN THIS LETTER WITH YOUR COMPLETED SURVEY

Dear Conoco Employee:

I am a master's candidate in the Department of Nutrition Sciences, currently conducting research for my thesis in cooperation with the Health Horizon's program at Conoco. My research is designed to assess the needs and interests of Coordination Management personnel at Conoco regarding a wellness program.

The results obtained from this study will provide insight that would allow Health Horizons to better target the needs of Conoco employees and improve the overall wellness program. At **NO** time during the course of this study or during the analysis of the results will your name be associated with your response.

Your assistance is needed so this survey produces the most accurate and complete data possible. It will take approximately 10 to 15 minutes to complete. Please return the completed survey to your supervisor. Thank you for your cooperation.

Sincerely,

Angela E. Green
Angela E. Green, B.S.
Department of Nutrition Sciences

Lea L. Ebro
Lea L. Ebro, Ph.D., R.D.
Major Advisor
Department of Nutrition Sciences

WELLNESS SURVEY

In order to provide programs of interest to you, Health Horizons needs your input. Therefore all Coordination Management employees are receiving this questionnaire. Please complete it today and return it to your immediate supervisor in the enclosed envelope.

1. Things You Are Interested In (**Check all that apply; THEN CIRCLE THE THREE (3) MOST IMPORTANT ONES**):

I want to:
[] look better in my clothes
[] feel happier about life
[] quit smoking
[] lose weight
[] know what my blood pressure is
[] have more energy left at the end of the work day
[] feel better about myself
[] have firmer thighs
[] receive quick nutritious recipes
[] keep weight off when I lose it
[] know which diets are safe
[] cut down on the alcohol I drink
[] know the minimum of exercise I need to lose or maintain my weight
[] feel less depressed
[] be able to plan and prioritize my time
[] lower my risk for heart disease
[] know the easiest way to quit smoking
[] feel less anxious about the future
[] learn more about skin care for cancer prevention
[] know how to lower my cholesterol without medication
[] know how to deal better with my aging parent(s)
[] have a flatter stomach
[] know ways to quit smoking that I can try on my own
[] be able to say "no" to requests so I'm not overloaded
[] worry less about cancer
[] be more independent, do more things for myself
[] feel more in control of my life
[] learn how to discipline my kids without feeling guilty
[] stay active but avoid injuries
[] get along better with my family
[] prepare low cost nutritious meals
[] modify family recipes to lower fat, cholesterol, calories and salt
[] know what different blood pressure levels mean
[] find enough time to do everything that needs to be done
[] know how to read and understand labels
[] not worry so much about things
[] shop for healthy inexpensive food

[] sleep better at night
[] know what I can do to lower my blood pressure
[] get along better with people I work with
[] stop worrying about my health
[] check to see if I'm in good health
[] keep the spark in marriage
[] get back in shape after a recent lack of activty
[] not get out of breath so easily
[] live a healthier life without giving up everything I enjoy
[] other: (please be specific)

_____

_____

2. If Health Horizons offered classes or activities according to your top three (3) choices circled in the above questions, would you attend?

[] YES [] NO (Maybe means NO)

3. If I took part in a class, I would rather meet: (choose one)

[] once a week [] twice a week [] three times a week

(choose one):

[] for 15 minutes [] for 30 minutes
[] for 45 minutes [] for 55 minutes

For how many weeks? _____ weeks

4. I learn best: (choose one)

[] in a group [] one-to-one with an instructor [] on my own

5. In general, I learn best (check ALL that apply):

[] from lectures
[] "trial and error"
[] from reading pamphlets or handouts
[] video or audio cassettes
[] from demonstrations
[] from "homework"
[] hands-on experience
[] other (be specific) _____

Background Information: In order to better plan programs, it is helpful to see trends in interests by various groups. Please help by supplying the following information:

6. Sex: [] Male [] Female

Age Group: [] 18-24 [] 25-34 [] 35-44 [] 45-54 [] 55-64

7. How many times per week do you engage in aerobic exercise of at least 20-30 minutes duration (i.e. cycling, swimming, aerobic dance, jogging, active sports, brisk walking and sustained vigorous work)?

   a. Once or twice a week
   b. Three or four times per week
   c. Five or more time per week
   d. Don't have a regular exercise program

8. How often do you use the Conoco Fitness and Recreation facilities? (i.e. swimming pool, gymnasium, weight training etc...)

   a. Never
   b. Seldom or once/week
   c. 2-3 times/week
   d. 4 or more times/week

9. Please evaluate the Conoco Fitness and Recreation facilities by indicating whether you agree or disagree with these statements:

Current Fitness Facilities hours are:

Monday - Thursday: 5:30 a.m. - 9:00 p.m.
Friday: 5:30 a.m. - 6:00 p.m.
Saturday: 9:00 a.m. - 1:00 p.m.

Check appropriate box	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided
Hours are not convenient					
Location is not convenient					
Fitness & Recreation staff is helpful and friendly					
I am not interested in these facilities					
The exercise equipment is never available					
The lockers and dressing room meets my needs					

10. What times would be most convenient for you to participate:

Comments (List additional times if current hours don't meet your needs):_____
_____
_____

11. These activities are available at Conoco: basketball, walking, bicycling, weight training, aerobic dance, jogging/running, swimming. Are there any sports or activities not offered by Conoco that you would like to participate in? (please list) _____

_____

12. Please circle the following health problems that have been found in your immediate family:

a. Cancer
b. High Blood Pressure
c. Diabetes
d. Heart attack or died before age 55
e. None of the above

13. During your work hours, the foods you eat, including both meals and snacks, usually come from:

Meals	Snacks
____ Vending machines at Conoco	____ Vending machines at Conoco
____ Conoco Cafeteria	____ Conoco Cafeteria
____ Conoco Snack Bar	____ Conoco Snack Bar
____ Go out for meals	____ Bring from home
____ Bring from home	____ Other: (be specific)
____ Other: (be specific)	_____
_____	

14. What **three** methods of in-house communication do you read most often?

____ ADVENT	____ RECNEWS
____ TV monitors	____ E-Mail
____ Posters	____ Fliers
____ Ponocoan	____ Other (specify)
	_____

15. Please fill in the following:

Work hours:_____ A.M. / P.M.

Occupation:_____

THANK YOU FOR YOUR PARTICIPATION.

APPENDIX C

CORRESPONDENCE

Conoco Inc.
P O. Box 1267
Ponca City. OK 74603

TO: Distribution

FROM: Sheri McGregor

DATE: November 3, 1992

SUBJECT: Wellness Survey

Enclosed is a wellness survey to be distributed to all Ponca City Coordination Management employees (including yourself). Please encourage the employees in your group to complete the survey and have them return it to you as soon as possible.

The purpose of the survey is to assess the needs and interests of Coordination Management employees regarding a wellness program. The information will be used by Angela Green for her thesis (refer to cover letter on survey) and for Health Horizons in planning programs for Ponca City employees.

Please send all of the completed surveys to **Health Horizons, P160ST, by Friday, November 6.** Thank you for your cooperation.

Sincerely,

Sheri McGregor
Coordinator
Health Horizons

cc: Dennis Summers
Dennis Parker

Distribution:

Gene Stanely
Covey Moore
Bill Lundeen
Clem Heidlage
Pat Pruitt
Sharon Steelmon
Don Thomas
Jerry Barker
Steve Sprehe
Lloyd Cullison
Ken Yates
Jean Meeks

APPENDIX D

JOURNAL OF THE AMERICAN DIETETIC ASSOCIATION GUIDELINES TO AUTHORS

GUIDELINES FOR AUTHORS

The *Journal of The American Dietetic Association* is the official research publication of The American Dietetic Association. Its primary purpose is to publish manuscripts on current aspects of dietetics. We invite contributions of original research, review, and application in such areas as clinical and normal nutrition, community nutrition, dietetics education, and foodservice systems management.

Anonymous peer reviewers judge submitted manuscripts on the basis of content, originality, scientific accuracy, clarity, and contribution to the field of dietetics. Manuscripts are accepted at the discretion of the reviewers and the editors.

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A page with the original copyright transference and ethics statements must be signed and dated by all authors and submitted with the manuscript. The page should bear the title of the manuscript and the following statements:

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>
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If the manuscript is not accepted or is withdrawn before publication, the transfer of copyright is null and void.

HOW TO SUBMIT AN ARTICLE

Four double-spaced copies of the manuscript are required, along with a submission letter. The submission letter should include the following: (1) article category for which the manuscript is intended; (2) information concerning previous or concurrent publication or submission elsewhere of any part of the work; (3) a statement of financial or other relationships that might cause conflict of interest; (4) permission from any person mentioned in the acknowledgments or in a personal communication; and (5) the name, address, telephone number, and facsimile (fax) number of the corresponding author. Send to:

Elaine R. Monsen, PhD, RD
Editor, Journal of The American Dietetic Association
University of Washington, Mailstop DL-10
Seattle, WA 98195

Initial receipt of each manuscript will be acknowledged. After peer review, ie, within approximately 10 to 12 weeks of the date of the acknowledgment letter, the corresponding author will be notified whether the manuscript has been accepted, accepted with revision, or rejected.

ARTICLE CATEGORIES

The *Journal* typically publishes articles within four categories, described below with their requirements and manuscript components. Components are discussed under "Manuscript format."

Research

Manuscripts reporting original research should include (1) structured abstract (see box for directions); (2) introduction stating the purpose and relevance of the study; (3) clear and full description of materials and methods, including criteria for subject selection; (4) report of results (for clarity, this should follow the same order presented under "methods"); (5) discussion (for greatest value, results should be compared with other published data of a similar nature); and (6) applications. Research manuscripts should not exceed 3,000 words (approximately 12 double-spaced pages), plus tables, illustrations, and references necessary to support the data and their interpretation.

Perspectives in Practice/Review

Manuscripts containing practical applications or reviews should include (1) abstract; (2) introduction; (3) body, which develops the subject in logical order, with appropriate subheads; and (4) applications. These manuscripts should not exceed 2,000 words (approximately 8 double-spaced pages), not including relevant tables, illustrations, and references. However, the nature of the topic of review articles may require that they exceed the word limit.

Research and Professional Briefs

Short reports of preliminary research findings, case studies, or professional observations should include (1) introduction; (2) body, which develops the subject in logical order, with appropriate subheads, eg, methods, results, and discussion; and (3) applications. Research and Professional Briefs do not have abstracts. These manuscripts should be limited to no more than 1,000 words (approximately 3½ to 4 double-spaced pages), a maximum of two tables or illustrations, and pertinent references.

MANUSCRIPT FORMAT

All manuscripts must be typed double spaced on 8½ - by 11-in paper using a standard type size. Leave 1- to 1½-in margins on all sides. Number each manuscript page, and use manuscript paper with numbered lines if possible. A description of various components of a manuscript follows.

Authors' Page

All manuscripts should include a separate authors' page, which lists (1) title of the manuscript; (2) a list of two to four key words or short phrases; (3) word count for abstract and text; (4) corresponding author; (5) each author's name and academic degrees; (6) each author's position when the work was done and (if different) present position; and (7) each author's address (including zip code), telephone number, and fax number. Type authors' names and degrees exactly as they should appear on the published manuscript. Keeping this sheet separate facilitates the Editor's sending manuscripts out for anonymous review.

Title

The title should be specific and informative, conveying the findings of the research (eg, "Dietary fiber lowers serum cholesterol" rather than "Effects of dietary fiber on serum cholesterol"). It should appear on the first page of the manuscript, the abstract page, and the authors' page.

APPENDIX E

SUMMARY OF STATISTICS

TTEST PROCEDURE

****

Variable: FAM_DYN

Q12_2	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	112	0.19419643	0.28417302	0.02685183	0	1.25000000
1	79	0.28164557	0.29787465	0.03351352	0	1.25000000

Variances	T	DF	Prob>|T|
Unequal	-2.0364	163.1	0.0433
Equal	-2.0531	189.0	0.0414

For H0: Variances are equal, F' = 1.10 DF = (78,111) Prob>F' = 0.6435

****

Variable: FAM_DYN

Q5_1	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	149	0.20134228	0.26584556	0.02177892	0	1.25000000
1	42	0.33928571	0.35278262	0.05443554	0	1.25000000

Variances	T	DF	Prob>|T|
Unequal	-2.3528	54.8	0.0223
Equal	-2.7517	189.0	0.0065

For H0: Variances are equal, F' = 1.76 DF = (41,148) Prob>F' = 0.0154

****

Variable: FAM_DYN

Q5_2	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	131	0.20229008	0.27754851	0.02424953	0	1.25000000
1	60	0.29583333	0.31384597	0.04051734	0	1.25000000

Variances	T	DF	Prob>|T|
Unequal	-1.9810	102.8	0.0503
Equal	-2.0737	189.0	0.0395

For H0: Variances are equal, F' = 1.28 DF = (59,130) Prob>F' = 0.2510

****

Variable: FAM_DYN

Q5_4	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	127	0.18897638	0.27225640	0.02415885	0	1.25000000
1	64	0.31640625	0.31257440	0.03907180	0	1.00000000

Variances	T	DF	Prob>|T|
Unequal	-2.7740	112.2	0.0065
Equal	-2.9032	189.0	0.0041

For H0: Variances are equal, F' = 1.32 DF = (63,126) Prob>F' = 0.1922

****

Variable: FAM_DYN

Q5_5	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	109	0.16743119	0.23337065	0.02235285	0	0.75000000
1	82	0.31707317	0.33804261	0.03733056	0	1.25000000

Variances	T	DF	Prob>|T|
Unequal	-3.4392	136.4	0.0008
Equal	-3.6170	189.0	0.0004

For H0: Variances are equal, F' = 2.10 DF = (81,108) Prob>F' = 0.0003

****

Variable: FAM_DYN

Q5_6	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	170	0.21029412	0.28178935	0.02161226	0	1.25000000
1	21	0.40476190	0.32089903	0.07002591	0	1.00000000

Variances	T	DF	Prob>|T|
Unequal	-2.6536	24.0	0.0139
Equal	-2.9378	189.0	0.0037

For H0: Variances are equal, F' = 1.30 DF = (20,169) Prob>F' = 0.3741

****

Variable: EXERCISE

Q5_5	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	109	0.32765400	0.30633445	0.02934152	0	1.14285714
1	82	0.44250871	0.30251300	0.03340697	0	1.28571429

Variances	T	DF	Prob>|T|
Unequal	-2.5832	175.7	0.0106
Equal	-2.5786	189.0	0.0107

For H0: Variances are equal, F' = 1.03 DF = (108,81) Prob>F' = 0.9120

****

Variable: EXERCISE

Q5_7	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	49	0.26822157	0.31761314	0.04537331	0	1.28571429
1	142	0.41448692	0.29826044	0.02502946	0	1.14285714

Variances	T	DF	Prob>|T|
Unequal	-2.8226	79.2	0.0060
Equal	-2.9108	189.0	0.0040

For H0: Variances are equal, F' = 1.13 DF = (48,141) Prob>F' = 0.5655

****

Variable: EXERCISE

SEX	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	106	0.30997305	0.28535467	0.02771610	0	1.14285714
1	87	0.44499179	0.32636504	0.03499000	0	1.28571429

Variances	T	DF	Prob>|T|
Unequal	-3.0248	172.2	0.0029
Equal	-3.0650	191.0	0.0025

For H0: Variances are equal, F' = 1.31 DF = (86,105) Prob>F' = 0.1892

****

****

Variable: SELFCON

Q5_5	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	109	0.30183486	0.28414317	0.02721598	0	1.20000000
1	82	0.38902439	0.29102038	0.03213783	0	1.10000000

Variances	T	DF	Prob>|T|
Unequal	-2.0703	172.4	0.0399
Equal	-2.0774	189.0	0.0391

For H0: Variances are equal, F' = 1.05 DF = (81,108) Prob>F' = 0.8106

****

Variable: STRESS

Q5_5	N	Mean	Std Dev	Std Error	Minimum	Maximum
0	109	0.41055046	0.39458566	0.03779445	0	1.50000000
1	82	0.54878049	0.38377395	0.04238074	0	1.25000000

Variances	T	DF	Prob>|T|
Unequal	-2.4343	177.1	0.0159
Equal	-2.4247	189.0	0.0163

For H0: Variances are equal, F' = 1.06 DF = (108,81) Prob>F' = 0.7977

****

Analysis of Variance Procedure

Dependent Variable: EXERCISE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	4	1.51753485	0.37938371	4.19	0.0028
Error	190	17.20397221	0.09054722		
Corrected Total	194	18.72150706			

R-Square	C.V.	Root MSE	EXERCISE Mean
0.081058	81.49664	0.300911	0.36923077

Source	DF	Anova SS	Mean Square	F Value	Pr > F
AGE	4	1.51753485	0.37938371	4.19	0.0028

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: EXERCISE

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 190 MSE= 0.090547
WARNING: Cell sizes are not equal.
Harmonic Mean of cell sizes= 20.85608

Number of Means	2	3	4	5
Critical Range	0.185	0.195	0.201	0.205

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	AGE
A	0.5044	49	2
A			
B A	0.4286	24	5
B A			
B A	0.3112	56	4
B			
B	0.2978	59	3
B			
B	0.2857	7	1

Analysis of Variance Procedure

Dependent Variable: STRESS

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	1.00773662	0.50386831	3.30	0.0390
Error	179	27.30579360	0.15254633		
Corrected Total	181	28.31353022			

R-Square	C.V.	Root MSE	STRESS Mean
0.035592	82.41631	0.390572	0.47390110

Source	DF	Anova SS	Mean Square	F Value	Pr > F
Q4	2	1.00773662	0.50386831	3.30	0.0390

Analysis of Variance Procedure

Duncan's Multiple Range Test for variable: STRESS

NOTE: This test controls the type I comparisonwise error rate, not the experimentwise error rate

Alpha= 0.05 df= 179 MSE= 0.152546
WARNING: Cell sizes are not equal.
Harmonic Mean of cell sizes= 57.53652

Number of Means	2	3
Critical Range	0.145	0.152

Means with the same letter are not significantly different.

Duncan Grouping	Mean	N	Q4
A	0.5880	54	2
B	0.4321	81	1
B			
B	0.4149	47	3

TABLE OF Q9_4 BY Q3_2

Q9_4	Q3_2				
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	Total
1	2 1.295 0.3839 1.44 22.22 10.00	3 4.6619 0.5924 2.16 33.33 4.17	0 1.7482 1.7482 0.00 0.00 0.00	4 1.295 5.6505 2.88 44.44 20.00	9 6.47
2	2 2.3022 0.0397 1.44 12.50 10.00	11 8.2878 0.8876 7.91 68.75 15.28	1 3.1079 1.4297 0.72 6.25 3.70	2 2.3022 0.0397 1.44 12.50 10.00	16 11.51
3	6 7.9137 0.4628 4.32 10.91 30.00	26 28.489 0.2175 18.71 47.27 36.11	12 10.683 0.1622 8.63 21.82 44.44	11 7.9137 1.2037 7.91 20.00 55.00	55 39.57
4	2 5.4676 2.1992 1.44 5.26 10.00	23 19.683 0.5588 16.55 60.53 31.94	11 7.3813 1.7741 7.91 28.95 40.74	2 5.4676 2.1992 1.44 5.26 10.00	38 27.34
5	8 3.0216 8.2025 5.76 38.10 40.00	9 10.878 0.3241 6.47 42.86 12.50	3 4.0791 0.2855 2.16 14.29 11.11	1 3.0216 1.3525 0.72 4.76 5.00	21 15.11
Total	20 14.39	72 51.80	27 19.42	20 14.39	139 100.00

Frequency Missing = 60

STATISTICS FOR TABLE OF Q9_4 BY Q3_2

Statistic	DF	Value	Prob
Chi-Square	12	29.714	0.003
Likelihood Ratio Chi-Square	12	28.916	0.004
Mantel-Haenszel Chi-Square	1	4.340	0.037
Phi Coefficient		0.462	
Contingency Coefficient		0.420	
Cramer's V		0.267	

Effective Sample Size = 139
Frequency Missing = 60
WARNING: 30% of the data are missing.
WARNING: 50% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q9_2 BY Q3_WEEKS

Q9_2	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	5	6	Total
1	0 0.4167 0.4167 0.00 0.00 0.00	0 0.0833 0.0833 0.00 0.00 0.00	3 0.75 6.75 2.78 33.33 33.33	0 2.25 2.25 0.00 0.00 0.00	0 0.1667 0.1667 0.00 0.00 0.00	1 2.8333 1.1863 0.93 11.11 2.94	9 8.33
2	2 0.7407 2.1407 1.85 12.50 40.00	0 0.1481 0.1481 0.00 0.00 0.00	2 1.3333 0.3333 1.85 12.50 22.22	5 4 0.25 4.63 31.25 18.52	0 0.2963 0.2963 0.00 0.00 0.00	5 5.037 0.0003 4.63 31.25 14.71	16 14.81
3	1 2.1296 0.5992 0.93 2.17 20.00	1 0.4259 0.7738 0.93 2.17 100.00	3 3.8333 0.1812 2.78 6.52 33.33	11 11.5 0.0217 10.19 23.91 40.74	2 0.8519 1.5475 1.85 4.35 100.00	14 14.481 0.016 12.96 30.43 41.18	46 42.59
4	0 1.3426 1.3426 0.00 0.00 0.00	0 0.2685 0.2685 0.00 0.00 0.00	1 2.4167 0.8305 0.93 3.45 11.11	10 7.25 1.0431 9.26 34.48 37.04	0 0.537 0.537 0.00 0.00 0.00	10 9.1296 0.083 9.26 34.48 29.41	29 26.85
5	2 0.3704 7.1704 1.85 25.00 40.00	0 0.0741 0.0741 0.00 0.00 0.00	0 0.6667 0.6667 0.00 0.00 0.00	1 2 0.5 0.93 12.50 3.70	0 0.1481 0.1481 0.00 0.00 0.00	4 2.5185 0.8715 3.70 50.00 11.76	8 7.41
Total	5 4.63	1 0.93	9 8.33	27 25.00	2 1.85	34 31.48	108 100.00

(Continued)

TABLE OF Q9_2 BY Q3_WEEKS

Q9_2	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	8	9	10	12	13	18	Total
1	0 0.8333 0.8333 0.00 0.00 0.00	0 0.0833 0.0833 0.00 0.00 0.00	1 0.25 2.25 0.93 11.11 33.33	1 0.5833 0.2976 0.93 11.11 14.29	0 0.0833 0.0833 0.00 0.00 0.00	0 0.0833 0.0833 0.00 0.00 0.00	9 8.33
2	1 1.4815 0.1565 0.93 6.25 10.00	0 0.1481 0.1481 0.00 0.00 0.00	0 0.4444 0.4444 0.00 0.00 0.00	0 1.037 1.037 0.00 0.00 0.00	0 0.1481 0.1481 0.00 0.00 0.00	0 0.1481 0.1481 0.00 0.00 0.00	16 14.81
3	6 4.2593 0.7114 5.56 13.04 60.00	0 0.4259 0.4259 0.00 0.00 0.00	2 1.2778 0.4082 1.85 4.35 66.67	6 2.9815 3.056 5.56 13.04 85.71	0 0.4259 0.4259 0.00 0.00 0.00	0 0.4259 0.4259 0.00 0.00 0.00	46 42.59
4	3 2.6852 0.0369 2.78 10.34 30.00	1 0.2685 1.9927 0.93 3.45 100.00	0 0.8056 0.8056 0.00 0.00 0.00	0 1.8796 1.8796 0.00 0.00 0.00	1 0.2685 1.9927 0.93 3.45 100.00	1 0.2685 1.9927 0.93 3.45 100.00	29 26.85
5	0 0.7407 0.7407 0.00 0.00 0.00	0 0.0741 0.0741 0.00 0.00 0.00	0 0.2222 0.2222 0.00 0.00 0.00	0 0.5185 0.5185 0.00 0.00 0.00	0 0.0741 0.0741 0.00 0.00 0.00	0 0.0741 0.0741 0.00 0.00 0.00	8 7.41
Total	10 9.26	1 0.93	3 2.78	7 6.48	1 0.93	1 0.93	108 100.00

(Continued)

TABLE OF Q9_2 BY Q3_WEEKS

Q9_2	Q3_WEEKS				
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	24	30	52	65	Total
1	0 0.0833 0.0833 0.00 0.00 0.00	1 0.1667 4.1667 0.93 11.11 50.00	2 0.3333 8.3333 1.85 22.22 50.00	0 0 . 0.00 0.00 .	9 8.33
2	0 0.1481 0.1481 0.00 0.00 0.00	1 0.2963 1.6713 0.93 6.25 50.00	0 0.5926 0.5926 0.00 0.00 0.00	0 0 . 0.00 0.00 .	16 14.81
3	0 0.4259 0.4259 0.00 0.00 0.00	0 0.8519 0.8519 0.00 0.00 0.00	0 1.7037 1.7037 0.00 0.00 0.00	0 0 . 0.00 0.00 .	46 42.59
4	1 0.2685 1.9927 0.93 3.45 100.00	0 0.537 0.537 0.00 0.00 0.00	1 1.0741 0.0051 0.93 3.45 25.00	0 0 . 0.00 0.00 .	29 26.85
5	0 0.0741 0.0741 0.00 0.00 0.00	0 0.1481 0.1481 0.00 0.00 0.00	1 0.2963 1.6713 0.93 12.50 25.00	0 0 . 0.00 0.00 .	8 7.41
Total	1 0.93	2 1.85	4 3.70	0 0.00	108 100.00

Frequency Missing = 91

STATISTICS FOR TABLE OF Q9_2 BY Q3_WEEKS
(ROWS AND COLUMNS WITH ZERO TOTALS EXCLUDED)

Statistic	DF	Value	Prob
Chi-Square	56	74.672	0.048
Likelihood Ratio Chi-Square	56	73.767	0.056
Mantel-Haenszel Chi-Square	1	1.355	0.244
Phi Coefficient		0.832	
Contingency Coefficient		0.639	
Cramer's V		0.416	

Effective Sample Size = 108
Frequency Missing = 91
WARNING: 46% of the data are missing.
WARNING: 93% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q9_1 BY SEX

Q9_1	SEX		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	0	1	Total
0	0 0.5886 0.5886 0.00 0.00 0.00	1 0.4114 0.8422 0.63 100.00 1.54	1 0.63
1	18 16.481 0.14 11.39 64.29 19.35	10 11.519 0.2003 6.33 35.71 15.38	28 17.72
2	15 15.304 0.006 9.49 57.69 16.13	11 10.696 0.0086 6.96 42.31 16.92	26 16.46
3	36 31.196 0.7397 22.78 67.92 38.71	17 21.804 1.0584 10.76 32.08 26.15	53 33.54
4	9 17.07 3.8149 5.70 31.03 9.68	20 11.93 5.4582 12.66 68.97 30.77	29 18.35
5	15 12.361 0.5635 9.49 71.43 16.13	6 8.6392 0.8063 3.80 28.57 9.23	21 13.29
Total	93 58.86	65 41.14	158 100.00

Frequency Missing = 41

STATISTICS FOR TABLE OF Q9_1 BY SEX

Statistic	DF	Value	Prob
Chi-Square	5	14.227	0.014
Likelihood Ratio Chi-Square	5	14.563	0.012
Mantel-Haenszel Chi-Square	1	0.224	0.636
Phi Coefficient		0.300	
Contingency Coefficient		0.287	
Cramer's V		0.300	

Effective Sample Size = 158
Frequency Missing = 41
WARNING: 21% of the data are missing.

TABLE OF Q9_1 BY Q15

Q9_1 / Q15	1	2	3	4	5	Total
0	0	0	0	1	0	1
	0.6438	0.0313	0.1187	0.2	0.0063	
	0.6438	0.0313	0.1187	3.2	0.0063	
	0.00	0.00	0.00	0.63	0.00	0.63
	0.00	0.00	0.00	100.00	0.00	
	0.00	0.00	0.00	3.12	0.00	
1	8	0	7	13	0	28
	18.025	0.875	3.325	5.6	0.175	
	5.5756	0.875	4.0618	9.7786	0.175	
	5.00	0.00	4.37	8.13	0.00	17.50
	28.57	0.00	25.00	46.43	0.00	
	7.77	0.00	36.84	40.63	0.00	
2	18	2	1	5	0	26
	16.737	0.8125	3.0875	5.2	0.1625	
	0.0952	1.7356	1.4114	0.0077	0.1625	
	11.25	1.25	0.63	3.12	0.00	16.25
	69.23	7.69	3.85	19.23	0.00	
	17.48	40.00	5.26	15.63	0.00	
3	40	1	5	7	1	54
	34.763	1.6875	6.4125	10.8	0.3375	
	0.7891	0.2801	0.3111	1.337	1.3005	
	25.00	0.63	3.12	4.37	0.63	33.75
	74.07	1.85	9.26	12.96	1.85	
	38.83	20.00	26.32	21.87	100.00	
4	26	0	0	3	0	29
	18.669	0.9062	3.4437	5.8	0.1812	
	2.879	0.9062	3.4437	1.3517	0.1812	
	16.25	0.00	0.00	1.87	0.00	18.12
	89.66	0.00	0.00	10.34	0.00	
	25.24	0.00	0.00	9.38	0.00	
5	11	2	6	3	0	22
	14.163	0.6875	2.6125	4.4	0.1375	
	0.7062	2.5057	4.3924	0.4455	0.1375	
	6.87	1.25	3.75	1.87	0.00	13.75
	50.00	9.09	27.27	13.64	0.00	
	10.68	40.00	31.58	9.38	0.00	
Total	103	5	19	32	1	160
	64.37	3.12	11.88	20.00	0.63	100.00

Frequency Missing = 39

STATISTICS FOR TABLE OF Q9_1 BY Q15

Statistic	DF	Value	Prob
Chi-Square	20	48.845	0.000
Likelihood Ratio Chi-Square	20	49.570	0.000
Mantel-Haenszel Chi-Square	1	10.953	0.001
Phi Coefficient		0.553	
Contingency Coefficient		0.484	
Cramer's V		0.276	

Effective Sample Size = 160
Frequency Missing = 39
WARNING: 20% of the data are missing.
WARNING: 67% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q9_3 BY Q15

Q9_3	Q15					
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	5	Total
1	26 22.955 0.4038 16.56 76.47 24.53	2 1.2994 0.3778 1.27 5.88 33.33	1 4.1146 2.3577 0.64 2.94 5.26	4 5.414 0.3693 2.55 11.76 16.00	1 0.2166 2.8342 0.64 2.94 100.00	34 21.66
2	58 56.038 0.0687 36.94 69.88 54.72	3 3.172 0.0093 1.91 3.61 50.00	11 10.045 0.0909 7.01 13.25 57.89	11 13.217 0.3717 7.01 13.25 44.00	0 0.5287 0.5287 0.00 0.00 0.00	83 52.87
3	8 8.7771 0.0688 5.10 61.54 7.55	1 0.4968 0.5096 0.64 7.69 16.67	2 1.5732 0.1158 1.27 15.38 10.53	2 2.0701 0.0024 1.27 15.38 8.00	0 0.0828 0.0828 0.00 0.00 0.00	13 8.28
4	1 4.7261 2.9377 0.64 14.29 0.94	0 0.2675 0.2675 0.00 0.00 0.00	1 0.8471 0.0276 0.64 14.29 5.26	5 1.1146 13.543 3.18 71.43 20.00	0 0.0446 0.0446 0.00 0.00 0.00	7 4.46
5	13 13.503 0.0188 8.28 65.00 12.26	0 0.7643 0.7643 0.00 0.00 0.00	4 2.4204 1.0309 2.55 20.00 21.05	3 3.1847 0.0107 1.91 15.00 12.00	0 0.1274 0.1274 0.00 0.00 0.00	20 12.74
Total	106 67.52	6 3.82	19 12.10	25 15.92	1 0.64	157 100.00

Frequency Missing = 42

STATISTICS FOR TABLE OF Q9_3 BY Q15

Statistic	DF	Value	Prob
Chi-Square	16	26.964	0.042
Likelihood Ratio Chi-Square	16	23.273	0.107
Mantel-Haenszel Chi-Square	1	3.451	0.063
Phi Coefficient		0.414	
Contingency Coefficient		0.383	
Cramer's V		0.207	

Effective Sample Size = 157
Frequency Missing = 42
WARNING: 21% of the data are missing.
WARNING: 72% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q9_4 BY Q15

Q9_4	Q15					
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	5	Total
1	6	0	2	5	0	13
	8.8599	0.414	1.5732	2.0701	0.0828	
	0.9231	0.414	0.1158	4.147	0.0828	
	3.82	0.00	1.27	3.18	0.00	8.28
	46.15	0.00	15.38	38.46	0.00	
	5.61	0.00	10.53	20.00	0.00	
2	10	2	4	1	1	18
	12.268	0.5732	2.1783	2.8662	0.1146	
	0.4191	3.551	1.5234	1.2151	6.8369	
	6.37	1.27	2.55	0.64	0.64	11.46
	55.56	11.11	22.22	5.56	5.56	
	9.35	40.00	21.05	4.00	100.00	
3	46	2	3	10	0	61
	41.573	1.9427	7.3822	9.7134	0.3885	
	0.4714	0.0017	2.6013	0.0085	0.3885	
	29.30	1.27	1.91	6.37	0.00	38.85
	75.41	3.28	4.92	16.39	0.00	
	42.99	40.00	15.79	40.00	0.00	
4	30	0	5	6	0	41
	27.943	1.3057	4.9618	6.5287	0.2611	
	0.1515	1.3057	0.0003	0.0428	0.2611	
	19.11	0.00	3.18	3.82	0.00	26.11
	73.17	0.00	12.20	14.63	0.00	
	28.04	0.00	26.32	24.00	0.00	
5	15	1	5	3	0	24
	16.357	0.7643	2.9045	3.8217	0.1529	
	0.1125	0.0727	1.5119	0.1767	0.1529	
	9.55	0.64	3.18	1.91	0.00	15.29
	62.50	4.17	20.83	12.50	0.00	
	14.02	20.00	26.32	12.00	0.00	
Total	107	5	19	25	1	157
	68.15	3.18	12.10	15.92	0.64	100.00

Frequency Missing = 42

STATISTICS FOR TABLE OF Q9_4 BY Q15

Statistic	DF	Value	Prob
Chi-Square	16	26.488	0.048
Likelihood Ratio Chi-Square	16	22.949	0.115
Mantel-Haenszel Chi-Square	1	1.707	0.191
Phi Coefficient		0.411	
Contingency Coefficient		0.380	
Cramer's V		0.205	

Effective Sample Size = 157
Frequency Missing = 42
WARNING: 21% of the data are missing.
WARNING: 68% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q9_5 BY Q15

Q9_5 / Q15	1	2	3	4	5	Total
1	7	0	0	3	0	10
Expected	6.7333	0.3333	1.2667	1.6	0.0667	
Cell Chi-Square	0.0106	0.3333	1.2667	1.225	0.0667	
Percent	4.67	0.00	0.00	2.00	0.00	6.67
Row Pct	70.00	0.00	0.00	30.00	0.00	
Col Pct	6.93	0.00	0.00	12.50	0.00	
2	21	1	4	4	0	30
	20.2	1	3.8	4.8	0.2	
	0.0317	0	0.0105	0.1333	0.2	
	14.00	0.67	2.67	2.67	0.00	20.00
	70.00	3.33	13.33	13.33	0.00	
	20.79	20.00	21.05	16.67	0.00	
3	41	3	6	7	0	57
	38.38	1.9	7.22	9.12	0.38	
	0.1789	0.6368	0.2061	0.4928	0.38	
	27.33	2.00	4.00	4.67	0.00	38.00
	71.93	5.26	10.53	12.28	0.00	
	40.59	60.00	31.58	29.17	0.00	
4	5	0	0	7	0	12
	8.08	0.4	1.52	1.92	0.08	
	1.1741	0.4	1.52	13.441	0.08	
	3.33	0.00	0.00	4.67	0.00	8.00
	41.67	0.00	0.00	58.33	0.00	
	4.95	0.00	0.00	29.17	0.00	
5	27	1	9	3	1	41
	27.607	1.3667	5.1933	6.56	0.2733	
	0.0133	0.0984	2.7903	1.932	1.9319	
	18.00	0.67	6.00	2.00	0.67	27.33
	65.85	2.44	21.95	7.32	2.44	
	26.73	20.00	47.37	12.50	100.00	
Total	101	5	19	24	1	150
	67.33	3.33	12.67	16.00	0.67	100.00

Frequency Missing = 49

STATISTICS FOR TABLE OF Q9_5 BY Q15

Statistic	DF	Value	Prob
Chi-Square	16	28.553	0.027
Likelihood Ratio Chi-Square	16	26.412	0.048
Mantel-Haenszel Chi-Square	1	0.360	0.549
Phi Coefficient		0.436	
Contingency Coefficient		0.400	
Cramer's V		0.218	

Effective Sample Size = 150
Frequency Missing = 49
WARNING: 25% of the data are missing.
WARNING: 64% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q3_1 BY Q3_2

Q3_1	Q3_2				
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	Total
1	25 18.965 1.9207 14.71 20.16 96.15	67 62 0.4032 39.41 54.03 78.82	16 25.529 3.5571 9.41 12.90 45.71	16 17.506 0.1295 9.41 12.90 66.67	124 72.94
2	0 4.5882 4.5882 0.00 0.00 0.00	12 15 0.6 7.06 40.00 14.12	14 6.1765 9.9098 8.24 46.67 40.00	4 4.2353 0.0131 2.35 13.33 16.67	30 17.65
3	1 2.4471 0.8557 0.59 6.25 3.85	6 8 0.5 3.53 37.50 7.06	5 3.2941 0.8834 2.94 31.25 14.29	4 2.2588 1.3422 2.35 25.00 16.67	16 9.41
Total	26 15.29	85 50.00	35 20.59	24 14.12	170 100.00

Frequency Missing = 29

STATISTICS FOR TABLE OF Q3_1 BY Q3_2

Statistic	DF	Value	Prob
Chi-Square	6	24.703	0.000
Likelihood Ratio Chi-Square	6	26.980	0.000
Mantel-Haenszel Chi-Square	1	10.913	0.001
Phi Coefficient		0.381	
Contingency Coefficient		0.356	
Cramer's V		0.270	

Effective Sample Size = 170
Frequency Missing = 29
WARNING: 15% of the data are missing.
WARNING: 42% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q3_1 BY Q3_WEEKS

Q3_1	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	5	6	Total
1	7	3	8	26	2	32	93
	4.9695	2.1298	7.0992	20.588	1.4198	30.527	
	0.8297	0.3556	0.1143	1.4228	0.2371	0.0711	
	5.34	2.29	6.11	19.85	1.53	24.43	70.99
	7.53	3.23	8.60	27.96	2.15	34.41	
	100.00	100.00	80.00	89.66	100.00	74.42	
2	0	0	1	3	0	8	25
	1.3359	0.5725	1.9084	5.5344	0.3817	8.2061	
	1.3359	0.5725	0.4324	1.1606	0.3817	0.0052	
	0.00	0.00	0.76	2.29	0.00	6.11	19.08
	0.00	0.00	4.00	12.00	0.00	32.00	
	0.00	0.00	10.00	10.34	0.00	18.60	
3	0	0	1	0	0	3	13
	0.6947	0.2977	0.9924	2.8779	0.1985	4.2672	
	0.6947	0.2977	587E-7	2.8779	0.1985	0.3763	
	0.00	0.00	0.76	0.00	0.00	2.29	9.92
	0.00	0.00	7.69	0.00	0.00	23.08	
	0.00	0.00	10.00	0.00	0.00	6.98	
Total	7	3	10	29	2	43	131
	5.34	2.29	7.63	22.14	1.53	32.82	100.00

(Continued)

TABLE OF Q3_1 BY Q3_WEEKS

Q3_1	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	8	9	10	12	13	18	Total
1	8	2	1	1	0	1	93
	9.9389	2.1298	2.1298	5.6794	0.7099	0.7099	
	0.3783	0.0079	0.5993	3.8555	0.7099	0.1185	
	6.11	1.53	0.76	0.76	0.00	0.76	70.99
	8.60	2.15	1.08	1.08	0.00	1.08	
	57.14	66.67	33.33	12.50	0.00	100.00	
2	4	1	1	3	1	0	25
	2.6718	0.5725	0.5725	1.5267	0.1908	0.1908	
	0.6603	0.3192	0.3192	1.4217	3.4308	0.1908	
	3.05	0.76	0.76	2.29	0.76	0.00	19.08
	16.00	4.00	4.00	12.00	4.00	0.00	
	28.57	33.33	33.33	37.50	100.00	0.00	
3	2	0	1	4	0	0	13
	1.3893	0.2977	0.2977	0.7939	0.0992	0.0992	
	0.2684	0.2977	1.6567	12.948	0.0992	0.0992	
	1.53	0.00	0.76	3.05	0.00	0.00	9.92
	15.38	0.00	7.69	30.77	0.00	0.00	
	14.29	0.00	33.33	50.00	0.00	0.00	
Total	14	3	3	8	1	1	131
	10.69	2.29	2.29	6.11	0.76	0.76	100.00

(Continued)

TABLE OF Q3_1 BY Q3_WEEKS

Q3_1 / Q3_WEEKS	24	30	52	65	Total
1	0	1	1	0	93
	0.7099	1.4198	2.8397	0	
	0.7099	0.1241	1.1918	.	
	0.00	0.76	0.76	0.00	70.99
	0.00	1.08	1.08	0.00	
	0.00	50.00	25.00	.	
2	0	1	2	0	25
	0.1908	0.3817	0.7634	0	
	0.1908	1.0017	2.0034	.	
	0.00	0.76	1.53	0.00	19.08
	0.00	4.00	8.00	0.00	
	0.00	50.00	50.00	.	
3	1	0	1	0	13
	0.0992	0.1985	0.3969	0	
	8.1762	0.1985	0.9162	.	
	0.76	0.00	0.76	0.00	9.92
	7.69	0.00	7.69	0.00	
	100.00	0.00	25.00	.	
Total	1	2	4	0	131
	0.76	1.53	3.05	0.00	100.00

Frequency Missing = 68

STATISTICS FOR TABLE OF Q3_1 BY Q3_WEEKS
(ROWS AND COLUMNS WITH ZERO TOTALS EXCLUDED)

Statistic	DF	Value	Prob
Chi-Square	28	53.257	0.003
Likelihood Ratio Chi-Square	28	48.891	0.009
Mantel-Haenszel Chi-Square	1	12.782	0.000
Phi Coefficient		0.638	
Contingency Coefficient		0.538	
Cramer's V		0.451	

Effective Sample Size = 131
Frequency Missing = 68
WARNING: 34% of the data are missing.
WARNING: 84% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q3_1 BY Q5_5

Q3_1 / Q5_5	0	1	Total
1	79	48	127
	68.272	58.728	
	1.6859	1.9598	
	45.66	27.75	73.41
	62.20	37.80	
	84.95	60.00	
2	10	20	30
	16.127	13.873	
	2.3279	2.7062	
	5.78	11.56	17.34
	33.33	66.67	
	10.75	25.00	
3	4	12	16
	8.6012	7.3988	
	2.4614	2.8613	
	2.31	6.94	9.25
	25.00	75.00	
	4.30	15.00	
Total	93	80	173
	53.76	46.24	100.00

Frequency Missing = 26

STATISTICS FOR TABLE OF Q3_1 BY Q5_5

Statistic	DF	Value	Prob
Chi-Square	2	14.002	0.001
Likelihood Ratio Chi-Square	2	14.250	0.001
Mantel-Haenszel Chi-Square	1	13.093	0.000
Phi Coefficient		0.284	
Contingency Coefficient		0.274	
Cramer's V		0.284	

Effective Sample Size = 173
Frequency Missing = 26
WARNING: 13% of the data are missing.

TABLE OF Q3_2 BY Q3_WEEKS

Q3_2	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	1	2	3	4	5	6	Total
1	6 0.8308 32.164 4.62 33.33 100.00	1 0.4154 0.8228 0.77 5.56 33.33	1 1.3846 0.1068 0.77 5.56 10.00	4 3.8769 0.0039 3.08 22.22 14.29	0 0.2769 0.2769 0.00 0.00 0.00	4 5.9538 0.6412 3.08 22.22 9.30	18 13.85
2	0 2.8154 2.8154 0.00 0.00 0.00	1 1.4077 0.1181 0.77 1.64 33.33	5 4.6923 0.0202 3.85 8.20 50.00	16 13.138 0.6232 12.31 26.23 57.14	2 0.9385 1.2008 1.54 3.28 100.00	22 20.177 0.1647 16.92 36.07 51.16	61 46.92
3	0 1.4308 1.4308 0.00 0.00 0.00	0 0.7154 0.7154 0.00 0.00 0.00	2 2.3846 0.062 1.54 6.45 20.00	6 6.6769 0.0686 4.62 19.35 21.43	0 0.4769 0.4769 0.00 0.00 0.00	10 10.254 0.0063 7.69 32.26 23.26	31 23.85
4	0 0.9231 0.9231 0.00 0.00 0.00	1 0.4615 0.6282 0.77 5.00 33.33	2 1.5385 0.1385 1.54 10.00 20.00	2 4.3077 1.2363 1.54 10.00 7.14	0 0.3077 0.3077 0.00 0.00 0.00	7 6.6154 0.0224 5.38 35.00 16.28	20 15.38
Total	6 4.62	3 2.31	10 7.69	28 21.54	2 1.54	43 33.08	130 100.00

(Continued)

TABLE OF Q3_2 BY Q3_WEEKS

Q3_2	Q3_WEEKS						
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	8	9	10	12	13	18	Total
1	0	0	0	1	0	0	18
	1.9385	0.4154	0.4154	1.1077	0.1385	0.1385	
	1.9385	0.4154	0.4154	0.0105	0.1385	0.1385	
	0.00	0.00	0.00	0.77	0.00	0.00	13.85
	0.00	0.00	0.00	5.56	0.00	0.00	
	0.00	0.00	0.00	12.50	0.00	0.00	
2	5	0	1	3	1	0	61
	6.5692	1.4077	1.4077	3.7538	0.4692	0.4692	
	0.3749	1.4077	0.1181	0.1514	0.6004	0.4692	
	3.85	0.00	0.77	2.31	0.77	0.00	46.92
	8.20	0.00	1.64	4.92	1.64	0.00	
	35.71	0.00	33.33	37.50	100.00	0.00	
3	7	0	2	3	0	1	31
	3.3385	0.7154	0.7154	1.9077	0.2385	0.2385	
	4.0159	0.7154	2.3068	0.6254	0.2385	2.432	
	5.38	0.00	1.54	2.31	0.00	0.77	23.85
	22.58	0.00	6.45	9.68	0.00	3.23	
	50.00	0.00	66.67	37.50	0.00	100.00	
4	2	3	0	1	0	0	20
	2.1538	0.4615	0.4615	1.2308	0.1538	0.1538	
	0.011	13.962	0.4615	0.0433	0.1538	0.1538	
	1.54	2.31	0.00	0.77	0.00	0.00	15.38
	10.00	15.00	0.00	5.00	0.00	0.00	
	14.29	100.00	0.00	12.50	0.00	0.00	
Total	14	3	3	8	1	1	130
	10.77	2.31	2.31	6.15	0.77	0.77	100.00

(Continued)

TABLE OF Q3_2 BY Q3_WEEKS

Q3_2 / Q3_WEEKS	24	30	52	65	Total
1	0	1	0	0	18
	0.1385	0.2769	0.5538	0.1385	
	0.1385	1.888	0.5538	0.1385	
	0.00	0.77	0.00	0.00	13.85
	0.00	5.56	0.00	0.00	
	0.00	50.00	0.00	0.00	
2	1	0	3	1	61
	0.4692	0.9385	1.8769	0.4692	
	0.6004	0.9385	0.672	0.6004	
	0.77	0.00	2.31	0.77	46.92
	1.64	0.00	4.92	1.64	
	100.00	0.00	75.00	100.00	
3	0	0	0	0	31
	0.2385	0.4769	0.9538	0.2385	
	0.2385	0.4769	0.9538	0.2385	
	0.00	0.00	0.00	0.00	23.85
	0.00	0.00	0.00	0.00	
	0.00	0.00	0.00	0.00	
4	0	1	1	0	20
	0.1538	0.3077	0.6154	0.1538	
	0.1538	1.5577	0.2404	0.1538	
	0.00	0.77	0.77	0.00	15.38
	0.00	5.00	5.00	0.00	
	0.00	50.00	25.00	0.00	
Total	1	2	4	1	130
	0.77	1.54	3.08	0.77	100.00

Frequency Missing = 69

STATISTICS FOR TABLE OF Q3_2 BY Q3_WEEKS

Statistic	DF	Value	Prob
Chi-Square	45	85.815	0.000
Likelihood Ratio Chi-Square	45	71.688	0.007
Mantel-Haenszel Chi-Square	1	0.541	0.462
Phi Coefficient		0.812	
Contingency Coefficient		0.631	
Cramer's V		0.469	

Effective Sample Size = 130
Frequency Missing = 69
WARNING: 35% of the data are missing.
WARNING: 89% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF Q3_2 BY Q5_5

Q3_2	Q5_5		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	0	1	Total
1	20 14.14 2.4282 11.70 76.92 21.51	6 11.86 2.8952 3.51 23.08 7.69	26 15.20
2	48 46.772 0.0322 28.07 55.81 51.61	38 39.228 0.0384 22.22 44.19 48.72	86 50.29
3	13 19.035 1.9134 7.60 37.14 13.98	22 15.965 2.2814 12.87 62.86 28.21	35 20.47
4	12 13.053 0.0849 7.02 50.00 12.90	12 10.947 0.1012 7.02 50.00 15.38	24 14.04
Total	93 54.39	78 45.61	171 100.00

Frequency Missing = 28

STATISTICS FOR TABLE OF Q3_2 BY Q5_5

Statistic	DF	Value	Prob
Chi-Square	3	9.775	0.021
Likelihood Ratio Chi-Square	3	10.141	0.017
Mantel-Haenszel Chi-Square	1	5.692	0.017
Phi Coefficient		0.239	
Contingency Coefficient		0.233	
Cramer's V		0.239	

Effective Sample Size = 171
Frequency Missing = 28
WARNING: 14% of the data are missing.

TABLE OF AGE BY Q5_5

AGE / Frequency / Expected / Cell Chi-Square / Percent / Row Pct / Col Pct	Q5_5 0	Q5_5 1	Total
1	5	2	7
	4.0104	2.9896	
	0.2442	0.3276	
	2.60	1.04	3.65
	71.43	28.57	
	4.55	2.44	
2	27	22	49
	28.073	20.927	
	0.041	0.055	
	14.06	11.46	25.52
	55.10	44.90	
	24.55	26.83	
3	25	32	57
	32.656	24.344	
	1.795	2.4079	
	13.02	16.67	29.69
	43.86	56.14	
	22.73	39.02	
4	41	13	54
	30.937	23.062	
	3.2729	4.3904	
	21.35	6.77	28.12
	75.93	24.07	
	37.27	15.85	
5	12	13	25
	14.323	10.677	
	0.3767	0.5054	
	6.25	6.77	13.02
	48.00	52.00	
	10.91	15.85	
Total	110	82	192
	57.29	42.71	100.00

Frequency Missing = 7

STATISTICS FOR TABLE OF AGE BY Q5_5

Statistic	DF	Value	Prob
Chi-Square	4	13.416	0.009
Likelihood Ratio Chi-Square	4	13.894	0.008
Mantel-Haenszel Chi-Square	1	0.372	0.542
Phi Coefficient		0.264	
Contingency Coefficient		0.256	
Cramer's V		0.264	

Effective Sample Size = 192
Frequency Missing = 7

TABLE OF Q3_WEEKS BY AGE

Q3_WEEKS / AGE	1	2	3	4	5	Total
1	0	0	1	2	4	7
	0.3182	2.0682	2.1742	1.697	0.7424	
	0.3182	2.0682	0.6342	0.0541	14.293	
	0.00	0.00	0.76	1.52	3.03	5.30
	0.00	0.00	14.29	28.57	57.14	
	0.00	0.00	2.44	6.25	28.57	
2	0	2	0	1	0	3
	0.1364	0.8864	0.9318	0.7273	0.3182	
	0.1364	1.3992	0.9318	0.1023	0.3182	
	0.00	1.52	0.00	0.76	0.00	2.27
	0.00	66.67	0.00	33.33	0.00	
	0.00	5.13	0.00	3.12	0.00	
3	0	3	2	2	3	10
	0.4545	2.9545	3.1061	2.4242	1.0606	
	0.4545	0.0007	0.3939	0.0742	3.5463	
	0.00	2.27	1.52	1.52	2.27	7.58
	0.00	30.00	20.00	20.00	30.00	
	0.00	7.69	4.88	6.25	21.43	
4	1	11	12	3	2	29
	1.3182	8.5682	9.0076	7.0303	3.0758	
	0.0768	0.6902	0.9941	2.3105	0.3763	
	0.76	8.33	9.09	2.27	1.52	21.97
	3.45	37.93	41.38	10.34	6.90	
	16.67	28.21	29.27	9.38	14.29	
5	0	1	0	1	0	2
	0.0909	0.5909	0.6212	0.4848	0.2121	
	0.0909	0.2832	0.6212	0.5473	0.2121	
	0.00	0.76	0.00	0.76	0.00	1.52
	0.00	50.00	0.00	50.00	0.00	
	0.00	2.56	0.00	3.12	0.00	
6	1	12	12	14	4	43
	1.9545	12.705	13.356	10.424	4.5606	
	0.4662	0.0391	0.1377	1.2266	0.0689	
	0.76	9.09	9.09	10.61	3.03	32.58
	2.33	27.91	27.91	32.56	9.30	
	16.67	30.77	29.27	43.75	28.57	
Total	6	39	41	32	14	132
	4.55	29.55	31.06	24.24	10.61	100.00

(Continued)

TABLE OF Q3_WEEKS BY AGE

Q3_WEEKS / AGE	1	2	3	4	5	Total
8	0	3	6	5	0	14
	0.6364	4.1364	4.3485	3.3939	1.4848	
	0.6364	0.3122	0.6272	0.76	1.4848	
	0.00	2.27	4.55	3.79	0.00	10.61
	0.00	21.43	42.86	35.71	0.00	
	0.00	7.69	14.63	15.63	0.00	
9	0	1	2	0	0	3
	0.1364	0.8864	0.9318	0.7273	0.3182	
	0.1364	0.0146	1.2245	0.7273	0.3182	
	0.00	0.76	1.52	0.00	0.00	2.27
	0.00	33.33	66.67	0.00	0.00	
	0.00	2.56	4.88	0.00	0.00	
10	1	0	1	1	0	3
	0.1364	0.8864	0.9318	0.7273	0.3182	
	5.4697	0.8864	0.005	0.1023	0.3182	
	0.76	0.00	0.76	0.76	0.00	2.27
	33.33	0.00	33.33	33.33	0.00	
	16.67	0.00	2.44	3.12	0.00	
12	1	4	2	0	1	8
	0.3636	2.3636	2.4848	1.9394	0.8485	
	1.1136	1.1329	0.0946	1.9394	0.0271	
	0.76	3.03	1.52	0.00	0.76	6.06
	12.50	50.00	25.00	0.00	12.50	
	16.67	10.26	4.88	0.00	7.14	
13	1	0	0	0	0	1
	0.0455	0.2955	0.3106	0.2424	0.1061	
	20.045	0.2955	0.3106	0.2424	0.1061	
	0.76	0.00	0.00	0.00	0.00	0.76
	100.00	0.00	0.00	0.00	0.00	
	16.67	0.00	0.00	0.00	0.00	
18	0	0	1	0	0	1
	0.0455	0.2955	0.3106	0.2424	0.1061	
	0.0455	0.2955	1.5301	0.2424	0.1061	
	0.00	0.00	0.76	0.00	0.00	0.76
	0.00	0.00	100.00	0.00	0.00	
	0.00	0.00	2.44	0.00	0.00	
Total	6	39	41	32	14	132
	4.55	29.55	31.06	24.24	10.61	100.00

(Continued)

TABLE OF Q3_WEEKS BY AGE

Q3_WEEKS / AGE	1	2	3	4	5	Total
24	0	0	1	0	0	1
	0.0455	0.2955	0.3106	0.2424	0.1061	
	0.0455	0.2955	1.5301	0.2424	0.1061	
	0.00	0.00	0.76	0.00	0.00	0.76
	0.00	0.00	100.00	0.00	0.00	
	0.00	0.00	2.44	0.00	0.00	
30	0	0	1	1	0	2
	0.0909	0.5909	0.6212	0.4848	0.2121	
	0.0909	0.5909	0.231	0.5473	0.2121	
	0.00	0.00	0.76	0.76	0.00	1.52
	0.00	0.00	50.00	50.00	0.00	
	0.00	0.00	2.44	3.12	0.00	
52	0	2	0	2	0	4
	0.1818	1.1818	1.2424	0.9697	0.4242	
	0.1818	0.5664	1.2424	1.0947	0.4242	
	0.00	1.52	0.00	1.52	0.00	3.03
	0.00	50.00	0.00	50.00	0.00	
	0.00	5.13	0.00	6.25	0.00	
65	1	0	0	0	0	1
	0.0455	0.2955	0.3106	0.2424	0.1061	
	20.045	0.2955	0.3106	0.2424	0.1061	
	0.76	0.00	0.00	0.00	0.00	0.76
	100.00	0.00	0.00	0.00	0.00	
	16.67	0.00	0.00	0.00	0.00	
Total	6	39	41	32	14	132
	4.55	29.55	31.06	24.24	10.61	100.00

Frequency Missing = 67

STATISTICS FOR TABLE OF Q3_WEEKS BY AGE

Statistic	DF	Value	Prob
Chi-Square	60	101.818	0.001
Likelihood Ratio Chi-Square	60	73.698	0.110
Mantel-Haenszel Chi-Square	1	2.611	0.106
Phi Coefficient		0.878	
Contingency Coefficient		0.660	
Cramer's V		0.439	

Effective Sample Size = 132
Frequency Missing = 67
WARNING: 34% of the data are missing.
WARNING: 93% of the cells have expected counts less than 5. Chi-Square may not be a valid test.

TABLE OF SEX BY Q5_1

SEX	Q5_1		
Frequency Expected Cell Chi-Square Percent Row Pct Col Pct	0	1	Total
0	88 81.789 0.4716 46.32 83.81 59.46	17 23.211 1.6618 8.95 16.19 40.48	105 55.26
1	60 66.211 0.5825 31.58 70.59 40.54	25 18.789 2.0528 13.16 29.41 59.52	85 44.74
Total	148 77.89	42 22.11	190 100.00

Frequency Missing = 9

STATISTICS FOR TABLE OF SEX BY Q5_1

Statistic	DF	Value	Prob
Chi-Square	1	4.769	0.029
Likelihood Ratio Chi-Square	1	4.753	0.029
Continuity Adj. Chi-Square	1	4.032	0.045
Mantel-Haenszel Chi-Square	1	4.744	0.029
Fisher's Exact Test (Left)			0.991
(Right)			2.25E-02
(2-Tail)			3.51E-02
Phi Coefficient		0.158	
Contingency Coefficient		0.156	
Cramer's V		0.158	

Effective Sample Size = 190
Frequency Missing = 9

APPENDIX F

SUMMARY OF SIGNIFICANT DATA

Table 10
Length of class in minutes and weeks

Weeks	Minutes	Percentage	Number
6 weeks	30 min.	17 %	(N=22)
4 weeks	30 min.	12 %	(N=16)
6 weeks	45 min.	8 %	(N=10)

Table 11
Length of class in minutes and learning by demonstration

Minutes	Percentage	Number
30 min.	22 %	(N=38)
45 min.	13 %	(N=22)
55 min.	7 %	(N=12)
15 min.	3.5 %	(N= 6)

Table 12
Learning from demonstrations and age

Age group	Percentage	Number
35-44	17 %	(N=32)
25-34	11 %	(N=22)
45-54	7 %	(N=13)

Table 13
Convenience of facility hours and shift

Shift	Agree	Disagree
7a.m.-6p.m.	41% (N=66)	16% (N=26)
5p.m.-1:30a.m.	6% (N=10)	12% (N=19)
Rotating shifts	3% (N= 5)	5% (N= 8)

Table 14
Helpfulness/friendliness of staff and shift

Shift	Agree	Disagree
7a.m.-6p.m.	53.5% (N=84)	6% (N=9)
Rotating shifts	14% (N=12)	2% (N=3)
5p.m.-1:30a.m.	9.5% (N=15)	4.5% (N=7)

Table 15
Interest in fitness facilities and shift

Shift	Interested	Not interested
7a.m.-6p.m.	48% (N=76)	10% (N=16)
5p.m.-1:30a.m.	10% (N=16)	4% (N= 6)
Rotating shifts	5% (N= 8)	4% (N= 6)

APPENDIX G

WELLNESS GOAL SUBDIVISIONS

Wellness Goal Subdivisions

Disease

- quit smoking
- know what my blood pressure is
- cut down on the alcohol I drink
- know the easiest way to quit smoking
- learn more about skin care for cancer prevention
- know ways to quit smoking that I can try on my own
- worry less about cancer
- know what different blood pressure levels mean
- check to see if I'm in good health

Exercise

- have more energy left at the end of the work day
- have firmer thighs
- know the minimum of exercise I need to lose or maintain my weight
- have a flatter stomach
- stay active but avoid injuries
- get back in shape after a recent lack of activity
- not get out of breath so easily

Family Dynamics

- know how to deal better with my aging parent(s)
- learn how to discipline my kids without feeling guilty
- get along better with my family
- keep the spark in my marriage

Nutrition

- lose weight
- receive quick nutritious recipes
- keep weight off when I lose it
- know which diets are safe
- lower my risk for heart disease
- know how to lower my cholesterol without medication
- prepare low cost nutritious meals
- modify family recipes to lower fat, cholesterol, calories and salt
- know how to read labels
- live a healthier life without giving up everything I enjoy

Self Concept

- look better in my clothes
- feel happier about life
- feel better about myself
- feel less depressed
- be more independent, do more things for myself

- feel more in control of my life
- not worry so much about things
- sleep better at night
- get along better with people I work with
- stop worrying about my health

Stress Management

- be able to plan and prioritize my time
- feel less anxious about the future
- be able to say 'no' to requests so I'm not overloaded
- find enough time to do everything that needs to be done

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVAL

IRB # _____

APPLICATION FOR REVIEW OF HUMAN SUBJECTS RESEARCH
(PURSUANT TO 45 CFR 46)
OKLAHOMA STATE UNIVERSITY INSTITUTIONAL REVIEW BOARD

Title of project (please type): Needs Assessment for a Wellness Program in a Petroleum Refinery.

Please attach copy of project proposal.

I agree to provide the proper surveillance of this project to ensure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

PRINCIPAL INVESTIGATOR(S): (If student, list advisor's name first)

Typed Name	Signature
Lea Ebro, Ph.D.,R.D.,L.D.	Lea Ebro
Angela Green, P.L.D.	Angela Green

Department	College
Nutritional Sciences	Home Economics

Faculty Member's Campus Address	Campus Phone Number
Room 424	744-8294

TYPE OF REVIEW REQUESTED: [X] EXEMPT [ ] EXPEDITED [ ] FULL BOARD
(Refer to OSU IRB Information Packet or the OSU IRB Brochure for an explanation of the types of review.)

1. Briefly describe the background and purpose of the research.
To assess the needs and interests of the refinery employees in order to tailor the current wellness program to better meet their needs.

2. Who will be the subjects in this study? How will they be solicited or contacted? Subjects must be informed about the nature of what is involved as a participant, including particularly a description of anything they might consider to be unpleasant or a risk. Please provide an outline or script of the information which will be provided to subjects prior to their volunteering to participate. Include a copy of the written solicitation and/or an outline of the oral solicitation.

   The subjects are the refinery personnel who volunteer to participate. They will receive the survey at their residence via mail delivery. The packet will include a cover letter explaining the purpose of the study, instructions and an envelope addressed to Health Horizons for returning the survey, a card coupon to receive the incentive, and the actual survey.

3. Briefly describe each condition or manipulation to be included within the study.

   Survey results will be analyzed statistically using research personnel.

4. What measures or observations will be taken in the study? Include a copy of any questionnaires, tests, or other written instruments that will be used.
   (See attached survey)

5. Will the subjects encounter the possibility of stress or psychological, social, physical, or legal risks which are greater, in probability or magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests?
   Yes [ ] No [X] If yes, please describe.

6. Will medical clearance be necessary before subjects can participate due to tissue or blood sampling, or administration of substances such as food or drugs, or physical exercise conditioning?
Yes [ ] No [X] If so, please describe.

Note: Refer to the OSU IRB Information Packet for information on the handling of blood and tissue samples.

7. Will the subjects be deceived or misled in any way? Yes [ ] No [X]
If yes, please describe and include an outline or script of the debriefing.

8. Will there be a request for information which subjects might consider to be personal or sensitive? Yes [ ] No [X] If yes, please describe.

9. Will the subjects be presented with materials which might be considered to be offensive, threatening, or degrading?
Yes [ ] No [X] If yes, please describe.

10. Will any inducements be offered to the subjects for their participation? Yes [X] No [ ] If yes, please describe.
If extra course credits are offered, are alternative means of obtaining additional credits available?

An incentive will be offered. A card will be included with the survey stating that if it takes more than 6 minutes to fill out the survey then they can take the card by to claim a Conoco hat. All participants will be eligible to receive a hat.

11. Will a written consent form be used? Yes [ ] No [X] If yes, please include the form, and if not, please indicate why not and how voluntary participation will be secured.

Note: The OSU IRB Information Packet illustrates elements which must be considered in preparing a written consent form. Conditions under which the IRB may waive the requirement for informed consent are to be found in 45 CFR 46.117 (c), (1) and (2).

Cover letter and questionnaire were approved by management at Conoco.

12. Will any aspect of the data be made a part of any record that can be identified with the subject? Yes [ ] No [X] If yes, please explain.

13. What steps will be taken to ensure the confidentiality of the data?

There will not be any codes or names used in the questionnaire and participation will be voluntary. A name and address will be used on the outside of the intial mailing envelope only.

14. Will the fact that a subject did or did not participate in a specific experiment or study be made a part of any record available to a supervisor, teacher, or employer? Yes [ ] No [X] If yes, please explain.

15. Describe any benefits that might accrue to either the subject or society. (See 45 CFR 46, section 46.111 (a) (2)).

Based on the results of the study, Conoco will offer programs that meet the needs of the employees. This could result in healthier, more satisfied employees who participate more often in wellness related activities. This might then result in increased worker productivity and/or decreased health care costs which would benefit not only the company, but also society.

Signature of Head or Chairperson	Date
Department or Administrative Unit	Date
College/Division Research Director	Date

Checklist for Application Submission

[ ] Proposal
[ ] Informed Consent Form/Assent (if appropriate)
[ ] Instrument(s) (questionnaire, survey, testing, field)
[ ] Curriculum Vita (not necessary for Exempt review)
[ ] Departmental/College/Division Signatures

Number of copies to be submitted:

Exempt Review: 2 copies
Expedited Review: 3 copies
Full Board Review: 7 copies

APPROVED 10-13-88

VITA

Angela Elaine Green

Candidate for the Degree of

Master of Science

Thesis: ASSESSMENT OF NEEDS AND INTERESTS CONCERNING THE EMPLOYEE WELLNESS PROGRAM AT THE PONCA CITY CONOCO REFINERY

Major Field: Nutritional Sciences

Biographical:

Personal Data: Born in Jacksonville, Texas, June 15, 1970, the daughter of Cecil and Barbara Heisler.

Education: Graduated from Chapel Hill High School, Tyler, Texas, in May, 1988; received Bachelor of Science degree in Scientific Nutrition from Texas A&M University in August, 1991; completed an Approved Pre-professional Practice Program at Oklahoma State University in May, 1992; attained Registered Dietitian Status in October, 1992; enrolled in masters program at Oklahoma State University, 1991-1993; completed requirements for the Master of Science degree at Oklahoma State University in May, 1993.

Professional Experience: Grocery Clerk, Tom Thumb Page, Tyler, Texas, June, 1986, to May, 1988; Cashier and Snack Bar Cook, Karen's Health Foods, Tyler, Texas, June, 1988, to August 1988; Volunteer Diet Aide, Crestview Retirement Community, Bryan, Texas, February, 1990, to April, 1990; Volunteer Diet Aide, St. Joseph's Hospital, Bryan, Texas, September, 1990, to October, 1990; Consultant Dietitian; Wheatheart Nutrition Project, January, 1993, to Present.

Professional Organizations: The American Dietetic Association, Oklahoma Dietetic Association, Aerobics and Fitness Association of America.